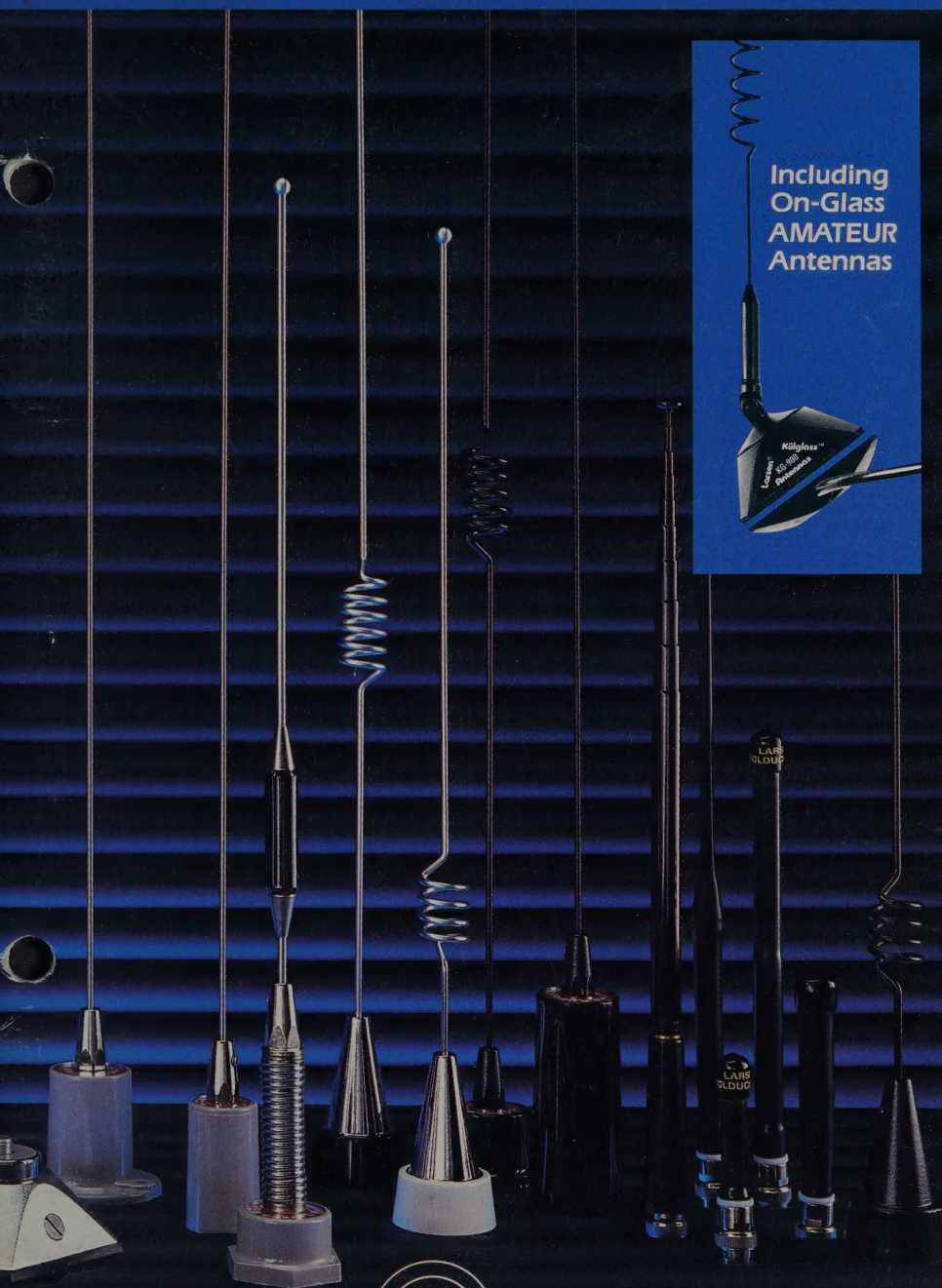


AMATEUR RADIO ANTENNAS

Including
On-Glass
AMATEUR
Antennas



Larsen Antennas

PERFORMANCE PERFECTION... A LARSEN TRADITION



A company's tradition is a collective thing. It encompasses the experiences of the many individuals, past and present, that contribute to the very essence of a company.

At Larsen, our experience embodies both Amateur and Professional radio communications. And we've found that each field benefits from the other. Amateur communications requires attention to maximum performance due to extensive range and changing geography. Professional communications, such as commercial two-way radio, often deal with limited and fixed geography. In addition,

installation time and durability are important considerations.

Larsen is successful in producing antennas that excel in both fields. In fact, Larsen products made for Amateur communications are the identical products provided for the Professional market — only the operating frequencies are altered. By coupling the needs in both areas, Larsen produces antennas truly suited to maximize performance and give customers the best of both worlds.

A DIFFERENCE IN PERFORMANCE

Our collective experience has



Gavin F. Fale, President and CEO (seated), and John C. Beaman, V.P. Marketing, take the lead in setting performance standards.



From product research to final inspection and testing, the collective experience of Larsen people is the basis for our performance perfection.

produced an important principle: no one antenna design can serve all purposes well. Also, achieving a high level of electrical performance involves making the best compromises between electrical, mechanical and cost choices.

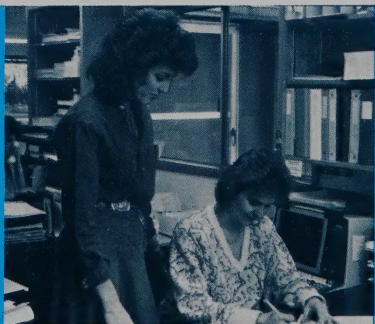
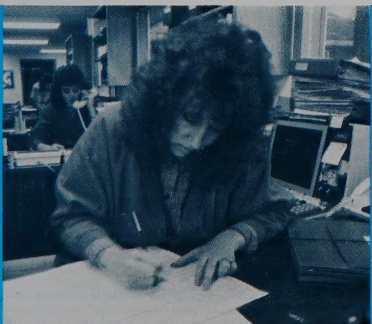
That's why the Larsen product line offers an enormous range of application selections — to provide the optimum performance level for any situation.

LOOKING TO THE FUTURE

Despite our extensive design selection and high performance standards, we're still learning

and growing. We're open to your requests to make further modifications to our existing designs to fit your specific applications. This is often as simple as calling our factory.

Experience, innovative design, applications flexibility — all make Larsen antennas your best performance value. And with our record as industry leader and extensive background in all areas of manufacturing, distribution and service, you can count on top performance from every Larsen antenna — both now and in the years to come.



Larsen customer service personnel satisfies customer needs throughout the U.S. and Canada.

HOW TO ORDER

With Larsen's Stock Option™ System, you can order your Larsen Antenna three different ways:

- 1** Order the antenna (includes base and whip) and the mounting kit separately.
- 2** Order the whip, loading coils/bases and mounts separately.
- 3** If it's more convenient you can still order the complete antenna unit. Just add the mounting style designation after the antenna series number.

For example: To order a complete LM-150 antenna with a permanent mount, you would specify LM-150-K; with a magnetic mount LM-150-MM; with a trunk lid mount LM-150-TLM; with a gutter clamp mount LM-150-GC, and with a trunk gutter mount LM-150-TMB.

You save two ways. You don't have to order any more items than you need. And the price is exactly the same whether you order the antenna as a complete unit or in components.

LARSEN® NO NONSENSE FULL SIX-MONTH WARRANTY

Larsen Electronics, Inc. and Canadian Larsen Electronics, Ltd. warrant to every user of a Larsen Antenna that it will perform to its specified ratings (published specifications) and will be free from defects in materials and workmanship.

Larsen will repair or replace, without charge, any Larsen Antenna which fails within six months of the purchase date to meet this warranty. Excluded, of course, is failure due to misuse such as striking solid or foreign objects (trees, buildings, overhangs, doorways, etc.), improper installation and application of power in excess of specified ratings.

Larsen will not, however, be responsible for any incidental or consequential damages due to failure of a Larsen Antenna under this warranty or any implied warranty.

In the United States some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

CLAIMS INSTRUCTIONS FOR UNITED STATES

In order to obtain performance under the Larsen Warranty obligation, return the antenna to the factory. If you desire, you may request Larsen issue a UPS Call Tag, or return shipment to: Larsen Electronics, Inc., Attn: Customer Service Department, P.O. Box 1799, Vancouver, WA 98668, 11611 N.E. 50th Avenue (98686).

Include with the antenna a note detailing the failure symptoms and indicate where and when the unit was purchased. **Be sure to include your full name and address.** Upon arrival at the Larsen factory the antenna will be promptly repaired or replaced and returned to you postpaid.

IMPORTANT: This warranty gives you specific legal rights and you may have other rights which vary from state to state.

In the application of its No Nonsense Warranty it is the intent and policy of Larsen Antennas to always use the yardstick of the Golden Rule. It is on this foundation that the company has built and prospered.

The price list that corresponds to this catalog is marked #88A, or #88A followed by a revision number. It shows all models alphabetically.

CONTENTS	PAGE
Külrod® MOBILE ANTENNAS	6
Frequency Bands/Application Notes	8
Electrical Types	10
Terms and Identifications	12
Mounting Styles	13
Series Designations	14
KG Series Külglass™ Antennas* for on-glass use in 144–148 MHz, 220–225 MHz, 440–450 MHz and 902–928 MHz	16
LA Series 144 to 450 MHz	20
LM Series 144 to 928 MHz	24
NLA Series 28 to 1300 MHz	28
NMO Series 28 to 1300 MHz	32
Specialized Antennas 144 to 450 MHz OM Series, PO Series, MHW Series, PHW Series, Special 1/4 Wave Antennas	37
Külduckie® PORTABLE ANTENNAS	41
Electrical Styles	42
HW 1/2 Wave	45
HQ Helical 1/4 Wave	45
Dual Frequency	45
1/4 Wave	45
Stout Helical	45
Helical	45
BASE STATION ANTENNAS	46
BSA Series	48
FB Series	49
YA Series	51
Coax Cable and Accessories for Base Station Antennas	53
COAX AND CONNECTORS	54
ACCESSORIES	56
Radio Mounts	56
Replacement Parts	59
Installation Tools	60
Miscellaneous Accessories	61
BNC to BNC Magnetic Mount	63
AD-2/70 Dual Band Coupler	63

*PATENT PENDING

LARSEN Kūlrod® MOBILE ANTENNAS

Every Larsen Kūlrod® Mobile Antenna meets the very highest standards in electrical performance, material makeup and service durability. You'll find

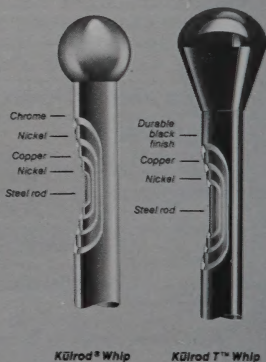
no better selection of high-quality, high-performance mobile antennas anywhere. And you have our full six-month warranty to back that claim.

Thirteen series allow compatibility with practically any mobile communications equipment available today — plus special application series are made for just about any unusual situation. Frequency selections range from 28 MHz to 1.3 GHz with seven electrical types in 1/4 Wave, 1/2 Wave, 5/8 Wave and four collinear configurations.

Kūlrod® WHIPS:

All whips are made with Larsen's exclusive Kūlrod® plating system that assures superior performance and long, attractive life. Each Kūlrod® antenna has a high tensile strength, 17-7PH stainless steel rod at its core. It provides the right combination of strength and flexibility to minimize radiation pattern distortion and still endure the stress of rugged use. A thin layer of nickel is next applied, followed by a thick layer of copper — used because of its superior, high efficiency conductivity. Two finishes are finally applied to assure maximum power transformed into signal — not heat.

The Chrome Finish Kūlrod® whip has thin coats of nickel and chrome over its copper layer to provide protection against corrosion and provide an attractive metallic finish. This plating system also



provides superior transmission capacity and low RF resistivity. And because the two outer layers are quite thin, they do not interfere with the copper layer's conductivity.

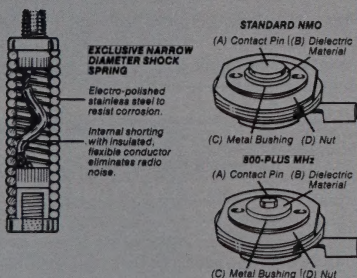
The Kūlrod T™ black finish adds only one protective coating to the copper conducting layer. Being inert, it doesn't become part of the radiating element, and thus allows very low RF resistivity and dielectric loss — ideal for critical 900-plus frequencies. The black Kūlrod T™ finish also provides excellent protection against corrosion, such as road or sea salt, and is cosmetically appealing with many car trim packages.

Most Larsen collinear whips are available with either open or closed phasing coils to provide the best electrical performance and mechanical durability under a wide variety of conditions.

Kūlrod® COILS/BASES:

Kūlrod® coils/bases are made for lasting service under the most demanding conditions and fit nearly any application need. Loading coils are air wound for the most efficient conduction of RF energy to the radiating element.

For low clearance protection, Larsen offers a narrow diameter shock spring — optional for VHF and UHF bands and standard on some 900-plus MHz antennas. Internal shorting with insulated, flexible conductor eliminates radio noise.



MOUNTING KITS:

Mounting modules are available for any conceivable mobile application and designed for lasting, secure use. Temporary mounts include gutter clamps, trunk gutter, trunk lid and magnetic types.

Permanent mounts are available with hardware only or complete kits with a choice of four coax cables to fit the application — including low-loss, dual shield coax. Special low-loss permanent mounts are automatically included in LM and NMO 900-plus antennas to significantly enhance performance at those critical frequency levels.

In every detail, Larsen Kūlrod® Mobile antennas are engineered for performance excellence and unfailing, long-lasting service.

DUAL FREQUENCY ANTENNAS AND COUPLER:

The Larsen 2/70 antenna design permits simultaneous use in two different amateur bands — the 2 Meter and 70 Centimeter bands. This antenna design operates as a 5/8 Wave antenna at 144–148 MHz and a collinear antenna at 440–450 MHz. Larsen offers a 2/70 antenna compatible with the NLA, NMO and PO styles of mounting. (See pages 30, 34, 39.)

If your dual band radio has separate inputs for VHF and UHF antennas, or if you plan to use separate radios for each band, Larsen can also provide a band splitter — Model AD-2/70. This product provides separate VHF and UHF ports from a composite signal coming from/to the Larsen 2/70 antenna. The VHF and UHF ports are isolated from each other by more than 50 dB. The model AD-2/70 splitter or coupler is essentially a high pass and low pass filter that cross at 283 MHz. This coupler has low insertion loss and can handle a composite signal of 200 watts. (See page 63.)

FREQUENCY BANDS

Use these quick identification charts to find the right frequency range and electrical type for your application.

Although not all electrical types are covered in all frequency ranges, Larsen makes available the most popular and suitable antennas in each range, as well as the electrical types that give optimum performance.

Special Frequency Requirements

Larsen manufactures a wide variety of antennas with different frequencies, gain, bandwidth and other characteristics. Please contact the Larsen factory for any special antenna you may need.

Dual Resonance Mobile Antennas

At this time, Larsen manufacturers only one multiple resonance amateur antenna. These antennas are designed for simultaneous operation on 2 Meter and 70 Centimeter bands. These all carry the designation 2/70 as a frequency identifier. They are available in NLA, NMO and PO series antennas shown on pages 28, 32 and 38 respectively.

Also note the availability of a dual band coupler that could couple two radios to a Larsen 2/70 antenna, couple two antennas to a dual band radio or couple a dual band antenna to a dual band radio that has separate VHF and UHF ports. This coupler, Model AD-2/70, is described on page 63.

28 to 30 MHz	ELECTRICAL TYPE	SERIES NOMENCLATURE							
		NMO	NLA	LM	LA	PO	OM	MHW	KG
	LOADED 1/4 WAVE	●	●						

50 to 54 MHz	ELECTRICAL TYPE	SERIES NOMENCLATURE							
		NMO	NLA	LM	LA	PO	OM	MHW	KG
	LOADED 1/4 WAVE	●	●						
	1/4 WAVE								

144 to 148 MHz and 220 to 225 MHz	ELECTRICAL TYPE	SERIES NOMENCLATURE							
		NMO	NLA	LM	LA	PO	OM	MHW	KG
	1/4 WAVE	●	●	●	●	●			
	1/2 WAVE	●	●				●		●
	5/8 WAVE	●	●	●	●	●			
	2M / 70CM DUAL	●	●			●			

440 to 450 MHz	ELECTRICAL TYPE	SERIES NOMENCLATURE							
		NMO	NLA	LM	LA	PO	OM	MHW	KG
	1/4 WAVE	●	●	●	●	●			
	1/2 WAVE	●	●				●	●	●
	5/8 WAVE	●	●	●	●	●			
	5/8 OVER 1/4 WAVE	●	●	●	●	●			
	5/8 OVER 1/2 WAVE	●	●	●	●	●			
	5/8 OVER 5/8 WAVE	●	●				●	●	
	2M / 70CM DUAL	●	●			●			

902 to 928 MHz	ELECTRICAL TYPE	SERIES NOMENCLATURE							
		NMO	NLA	LM	LA	PO	OM	MHW	KG
	1/4 WAVE	●		●					
	5/8 OVER 1/4 WAVE	●		●					
	5/8 OVER 1/2 WAVE	●		●					●

1215 to 1300 MHz	ELECTRICAL TYPE	SERIES NOMENCLATURE							
		NMO	NLA	LM	LA	PO	OM	MHW	KG
	1/4 WAVE	●	●						
	1/2-1/2-1/4 WAVE	●	●						

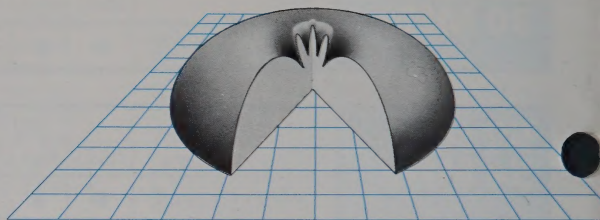
ELECTRICAL TYPES

Choosing the proper antennas for any application requires carefully weighing these criteria.

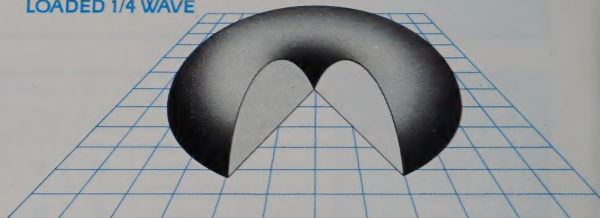
- (1) GAIN
- (2) PHYSICAL SIZE
- (3) COST
- (4) APPEARANCE

The gain required depends on system margins and how far the system must operate. Generally, the more gain, the more cost, and the longer the antenna. Systems where the antenna can be a low performance type will have less cost and less noticeable antennas at any particular frequency. Installations that have a suitable ground plane will have the same performance at less cost than those without adequate ground plane.

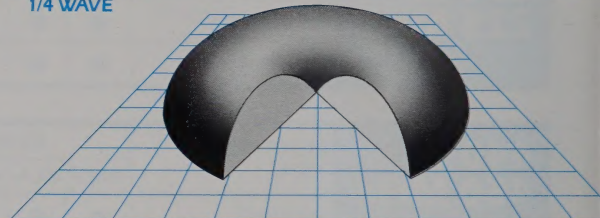
To determine the best mobile antenna type to use in a particular installation, you should first be acquainted with all the electrical types available. Keep in mind that not all types are available in all mechanical configurations and frequencies.



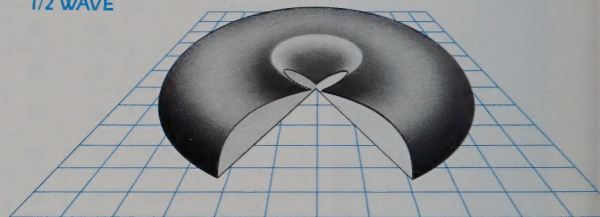
LOADED 1/4 WAVE



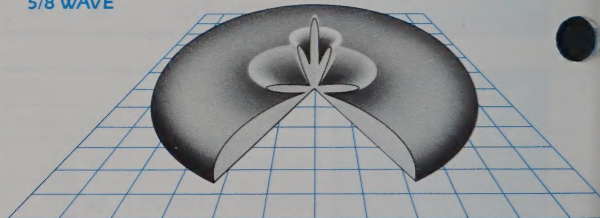
1/4 WAVE



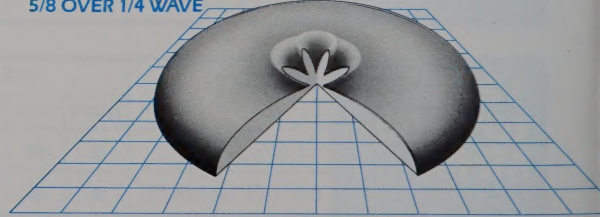
1/2 WAVE



5/8 WAVE



5/8 OVER 1/2 WAVE,
5/8 OVER 1/4 WAVE



5/8 OVER 5/8 WAVE

LOADED 1/4 WAVE

The loaded 1/4 Wave type antenna is electrically a 1/4 Wave, while being shorter than a full size 1/4 Wave antenna. This is accomplished with a loading coil that places a portion of the electrical length of the antenna in a coil located at the base of the radiating element. The efficiency of the antenna depends on how much of the electrical length is inside the coil (and therefore not radiating). Typical gain is comparable to a full 1/4 Wave where the full 1/4 Wave is mounted on the fender and the loaded 1/4 Wave is mounted on the roof. Typical length at lowest recommended frequency is 49".

1/4 WAVE

The 1/4 Wave is a single radiating element 1/4 wavelength long. It is the simplest and least expensive type of antenna. Length varies from 20" long at 144 MHz to 3" long at 900 MHz. The 1/4 wavelength antenna requires no loading or matching coil. Typical gain is 0 dB when mounted on a suitable ground plane.

1/2 WAVE

The 1/2 Wave antenna is a single radiating element 1/2 wavelength long. Because the end fed impedance of the antenna is not suitable for matching the radio, an impedance matching transformer is used at the base of the radiating element. Length varies from 49" at 120 MHz to 13" at 440 MHz. The 1/2 Wave antenna is suitable for use where no ground plane exists. The gain with no ground plane is 0 dB. Gain with suitable ground plane is 2.4 dB.

5/8 WAVE

The 5/8 Wave antenna is a single radiating element 5/8 wavelength long. In single element antennas the 5/8 Wave antenna has the best performance (3 dB) when mounted on a suitable ground plane. Element length varies from 49" at 144 MHz to 18" at 440 MHz. Since the end fed impedance of a 5/8 Wave antenna is unsuitable for interface with a radio, an impedance transformer is used at the base of the rod. Must be mounted on a suitable ground plane.

COLLINEAR 5/8 OVER 1/2 WAVE COLLINEAR 5/8 OVER 1/4 WAVE

These collinear designs have two elements separated by a phasing coil. The top element is a 5/8 Wave and the bottom element is either a 1/2 Wave or 1/4 Wave. Gain is typically 5 dB for 1/2 Wave lower element and 3–4 dB with 1/4 Wave lower element when mounted on a suitable ground plane. Antenna length is 23" to 29" at 440 MHz depending on lower element. The end fed impedance matches the transmitter's impedance, so no transformer is used.

COLLINEAR 5/8 OVER 5/8 WAVE

This collinear design has two elements separated by a phasing coil. Both top and bottom elements are 5/8 Wave. Gain is typically 5 dB when mounted on suitable ground plane. Collinear element length is 33" at 440 MHz. The end fed impedance does not match the transmitter's impedance, so a transformer is used.

TERMS AND IDENTIFICATIONS

Special model number designations, terms and abbreviations are used to facilitate quick identification and accurate ordering of Larsen products from this catalog.

AD Refers to antenna duplexer or coupler.

B Black coated Kūlrod® whip when used after a "W" whip designation.

BA Female to female UHF connector with extra hardware useful in bulkhead mounting Larsen PO, MHW and NLA series antennas.

BASE An antenna base that does not have a transformer or loading purpose. Its purpose is a mechanical one — to connect the whip to the mount.

BASE B Indicates that the color of base is black.

BCO Indicates that the product is a COIL only but the color of the coil is black.

BNC Made to mount on BNC female or including BNC male connector.

BSA-K Base Station Adapter Kit. Makes a gain, ground plane antenna when used with Larsen Models PO-150, PO-450, NMO-150 or NMO-450. Complete with mounting hardware. No coax or connector supplied.

CO Denotes that the product is a COIL only, i.e. no whip or mounting kit is included with that model. Color of the coil is Larsen Gray.

COIL Denotes an impedance matching antenna coil or an antenna loading coil.

DS or DSK Denotes mounting kit that uses dual shield RG-58 A/U coax for lower loss and excellent flexibility.

FB1 Designates a 5/8 over 1/2 collinear ground plane base station antenna.

FB2 Designates a 5/8 over 1/4 collinear ground plane base station antenna.

GC Gutter Clamp mount attaches quickly to car gutter. Supplied with factory assembled RG-58 A/U coax and connector.

HQ Kūlduckie® Portable Antenna with radiating element that is part helical and part 1/4 Wave construction.

HTQ Special 1/4 Wave antenna that mates with 5/16"-32 THDS female fitting.

HW HW indicates a design derived from a 1/2 Wave. Used as a designation for both mobile and portable antennas.

JM Larsen Mount for 3/8" hole in vehicle. Mates with any antenna using 5/16"-24 THDS stud.

K Permanent mounting kit.

KD Larsen Kūlduckie® Antenna ... the successor to the "rubber ducky" for handhelds and portables.

KG Kūlglass™ glass-mount antenna* series.

LA Fits GE, A/S and other 3/8" snap-in mounts using high impact molded polycarbonate insulators with 5/16"-24 THDS stud.

LL or LLK Indicates a mounting kit that employs AA-3096 coaxial cable for lowest loss, or indicates a connector that fits AA-3096 coax. (See description of coax types on pages 54 and 55.)

LM Larsen Mount. Simplest and easiest to install. Only three parts. Requires 3/4" hole. Provides 5/16"-24 THDS stud to the antenna.

MHW Mobile 1/2 Wave antenna. Interfaces with any SO-239 type mount such as Larsen BA, BA-K and BSA-K.

MM Magnetic Mount.

NLA Low silhouette flush mount unit utilizing all 3/8" snap-in hardware accepting molded insulator and braid nut. Installed appearance is greatly improved as high profile "black ball" is eliminated.

NLAQ 1/4 Wave whip antenna with molded base to mate directly with Larsen NLA hardware.

NMO Fits Motorola TAD and TAE series mount and their 3/4" holes. "NMO" is used to create a family of compatible antennas, mounts, whips, etc. Model numbers that have NMO in them are all compatible both mechanically and electrically.

NMOQ 1/4 Wave whip antenna with molded base to mate directly with Larsen NMO hardware.

OM Larsen flange mount and antenna base in a single unit. Used on fiberglass tops, trucks, boats, farm machinery, etc. where conventional mounts present problems. Antenna requires no ground plane.

PHW Portable 1/2 Wave for emergency use with portables.

PL PL-259 coax fitting complete with UG175 or UG176 adapter where appropriate.

PO Antenna series designed to fit onto SO-239 type UHF female connector for use on portables, utility stations or similar applications.

PQ 1/4 Wave antenna mounted in PL-259 plug to fit portable equipment such as GE Portamobile, Motorola, etc.

Q 1/4 Wave whip antenna with a threaded base fitting to fit 5/16"-24 THDS stud including GE, A/S, and Larsen LM, LA and JM.

SBK Stainless steel right angle mounting bracket with bulkhead adapter to interface PO antenna with PL-259 output. Does not include antenna, coax or connectors.

TLM Trunk Lid Mount for no-holes, no-mar applications. Also denotes complete mounting kit.

TMB Trunk Mounting Bracket for car trunk gutter. Also denotes complete mounting kit.

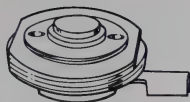
W Radiating element.

YA Designates a Yagi antenna design. Different YA series (YA1, YA2, YA5, YA6) designates differences in elements, connections, frequencies, gain, etc.

*PATENT PENDING.

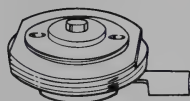
MOUNTING STYLES

Larsen offers six different mounting styles in each antenna series (except the 1/2 Wave) for permanent or temporary mounting. Other self-mounting styles are available, such as OM series or KG series, for special applications.



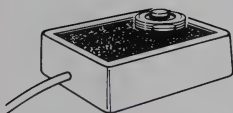
K PERMANENT HOLE MOUNTING

Specified by "K". Requires a hole be drilled in the vehicle. Holes are 3/8", 5/8" and 3/4" depending on the series you choose.



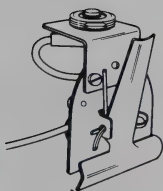
LLK/DSK LOW-LOSS MOUNTING KITS

Specified by "LLK" or "DSK". A permanent mounting kit made with low-loss coaxial cable. Because of much higher cost and more difficult installations, these kits are typically used with 900 MHz antenna installations, where use of coax with greater loss would provide marginal performance. However, many UHF radio systems could benefit from use of these kits through increased performance. Kits available with either a PL-259, "N", or "TNC" connector. Examples, (LLK-TNC), (DSK-N), etc.



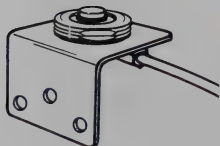
MM MAGNETIC MOUNT

Specified by "MM". Temporarily mounts an antenna to a metal vehicle. Attached by a magnetic base. Larsen has added Teflon® tape to the surface that touches the car for even better protection against scratches. It will not, however, hinder either the antenna performance or holding power. An excellent way to install an antenna that is moved or removed frequently.



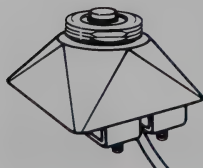
GC GUTTER CLAMP

Specified by "GC". Temporarily mounts the antenna by attaching it to the rain gutter of the vehicle. Because of the wide variations in rain gutters on modern vehicles, you should check to make sure it will work with your vehicle style before buying.



TMB TRUNK GUTTER MOUNT BRACKET

Specified by "TMB". Consists of a stainless steel right angle bracket. Installs in the gutter between the trunk lid and the fender. Installed with screws, but the holes for the screws are not visible from the outside of the car. The antenna and mounting kit can be removed without leaving any holes to be repaired.



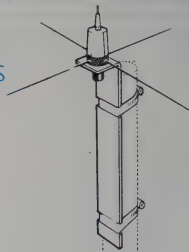
TLM TRUNK LID MOUNT

Specified by "TLM". Is secured to the trunk of the vehicle with set screws, leaving no holes to be filled when the antenna is removed.

SERIES DESIGNATIONS

Larsen offers 13 different antenna series, any of which will provide excellent performance when properly used. Each series has its own advantages depending upon your physical and electrical requirements. There are permanent mounts available for 3/8", 5/8", on-glass and 3/4" holes and temporary mounting options for Larsen's four main series — LA, LM, NLA and NMO.

BSA SERIES



BSA Series includes mounting hardware and ground radials to make PO into a ground plane base antenna, suitable for 144–450 MHz. NMO antennas may be used with A-2 adapter. (See also in Base Station section.)

KG SERIES*

**Kūlglass™
ON-GLASS
ANTENNAS**

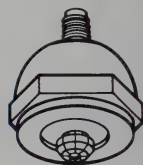


An on-glass antenna series designed for mounting on windshields, available in VHF, UHF and 900 MHz frequency bands. No holes necessary.

*(Patent Pending)

LA SERIES

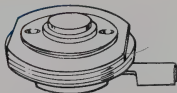
**PERMANENT
MOUNT FITS
3/8" HOLE**



Compatible with most dome or "snap-in" antenna mounts that use a 5/16"-24 THDS stud, including GE, A/S and other 3/8" mounts using high impact molded polycarbonate insulators.

NMO SERIES

**PERMANENT
MOUNT
FITS 3/4"
HOLE**

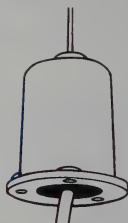


Compatible with Motorola TAD/TAE products and most other antenna makes. Offers the greatest mounting selection with over 1,500 application combinations available.

OM SERIES

Mounting hardware and coax is integral to the antenna coil.

Primarily intended for fiberglass vehicles but can also be used on metal installations. Ideal for situations where the antenna should not be removed, or where no ground plane exists. Mounts to the vehicle with three self-tapping screws or nuts and bolts. (See page 37.)



JM SERIES

**PERMANENT
MOUNT FITS
3/8" HOLE**



Provides an alternative to Larsen LA Series hardware and is designed to physically complement that series. (See LA Series, page 20.)

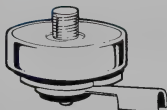
KD SERIES



The KD Series products include all popular types of antennas for portable applications, including helical, 1/4 Wave, stout helical, helical 1/4 Wave, 1/2 Wave and Dual Frequency types.

LM SERIES

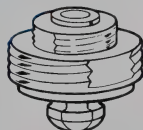
**PERMANENT
MOUNT
FITS 3/4"
HOLE**



Compatible with most antennas that use a 5/16"-24 THDS stud, including A/S, DB products, etc. This is the simplest and easiest of all the Larsen Antenna Series to install — only three parts are required.

NLA SERIES

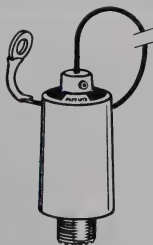
**PERMANENT
MOUNT
FITS 3/8"
HOLE**



Compatible with all "snap-in" type hardware. This series is similar to our LA Series but eliminates the need for the molded "dome" insulator and a braid nut.

PHW SERIES

**1/2 WAVE TYPE
ANTENNA
WITH FLEXIBLE
RADIATING
ELEMENT**



Useful for quick setup and restowing. Designed to be suspended by its radiating element from any elevated object. Normally not used on vehicles. Interfaces with a PL-259 connector. (See page 38.)

PO and MHW SERIES



Both attach to an SO-239 UHF connector and make excellent antennas for boat mast installation. The MHW may be used directly on the radio itself such as with "lunch box" radios. The PO Series has the same mechanical design but with a 5/8 Wave whip. (See page 38.)

Larsen Kūlglass™ Antennas*

■ KG-144 for 2 Meters ■ KG-220 for 1.25 Meters

New low impedance design provides top performance under all conditions.

The Kūlglass™ Antenna Series* (patent pending) is designed to perform in any on-glass application where the signal must be coupled from the inside of the vehicle through the windshield to the radiating element outside the vehicle.

The key to its high performance lies in placing the antenna tuning assembly outside the glass (with no tuning inside the vehicle) which allows a low impedance power transfer through the glass. This unique design provides several improvements in on-glass antenna performance. The Kūlglass™ system is less affected

by proximity to vehicle body and heating wires in the window, and minimizes radiation inside the vehicle. Moisture on the glass has no effect on performance. By utilizing an external tuning network, the Kūlglass™ series* uses full length radiating elements for peak performance.

Fully Adjustable and easy to install!

The Larsen KG Series Antenna* is fully adjustable to vertical for practically any rear window angle. This permits its collinear resonant design to attain low VSWR, low radiation angle and maximum omnidirectional range without a ground

KG SERIES

		FREQUENCY RANGE IN MHz						
ELECTRICAL TYPE	GAIN dB	28-30	50-54	144-148	220-225	440-450	902-928	1215-1300
1/4 WAVE	0							
LOADED 1/4 WAVE	0							
1/2 WAVE	2.4			●	●	●		
5/8 WAVE	3							
5/8 OVER 1/4 WAVE	3							
5/8 OVER 1/2 WAVE	3						●	
5/8 OVER 5/8 WAVE	5							

*Patent pending.

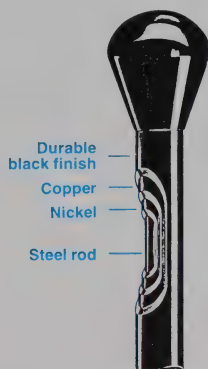
The Extraordinary On-Glass Performer

KG-440 for 70 cm **KG-900 for 902–928 MHz**

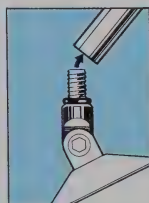
plane. This is especially important in high frequency applications where many quirks can exist among the low-power cells from one neighborhood to another. You get the required gain, usually without additional tuning at the time of installation or adjustment of whip length.

Exclusive Kūlrod T™ plating for peak performance and lasting service.

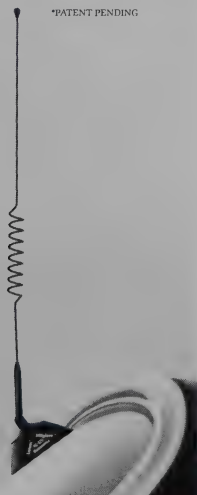
All KG Series antennas are protected with Larsen's exclusive Kūlrod T™ plating for long life and top performance and feature a sleek black finish for an appealing appearance.



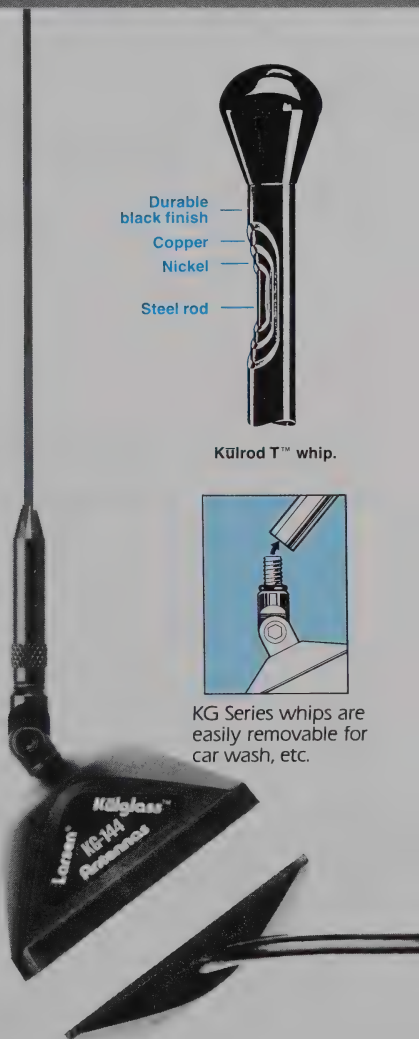
Kūlrod T™ whip.



KG Series whips are easily removable for car wash, etc.



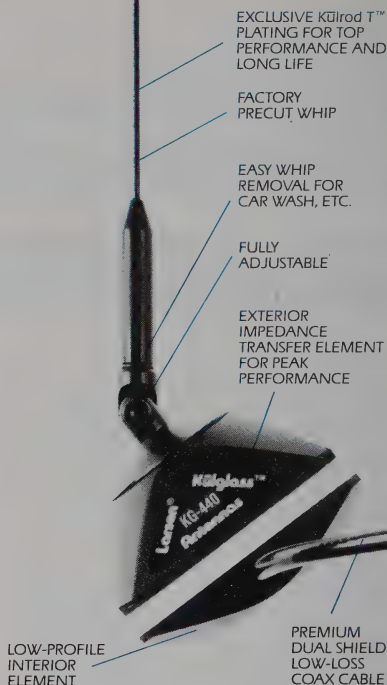
KG-900



KG-144 Kūlglass™ Antenna*

KG-144 antenna is offered to cover the 144–148 MHz range. The KG-144 antenna is a single 1/2 Wave design, offering unity gain without ground plane up to 2.4 dB gain in a typical installation. Maximum power rating is 160 watts. This antenna comes with precut rod and does not require any further tuning for resonance in its band.

The KG-144 antenna is shipped with PL-259T connector. Other connector types are available on special order.



KG-220 Kūlglass™ Antenna*

KG-220 antenna is offered to cover the 220–225 MHz range. The KG-220 antenna is a single 1/2 Wave design, offering unity gain without ground plane and up to 2.4 dB gain in a typical installation. Maximum power rating is 80 watts. This antenna comes with precut rod and does not require any further tuning for resonance in its band.

The KG-220 antenna is shipped with PL-259T connector. Other connector types are available on special order.

KG-440 Kūlglass™ Antenna*

KG-UHF antennas offer high performance in the 440–450 MHz range. These antennas are a single 1/2 Wave design, offering unity gain performance without a ground plane and up to 2.4 dB gain in a typical installation on a vehicle. Maximum power rating is 80 watts. The antenna rod length of 12–13 inches is ideal for low clearance situations. These antennas are available with popular connectors: N and PL-259T. Other connector types available on special order.

*Patent pending.

EXCLUSIVE Kūlrod™
PLATING FOR TOP
PERFORMANCE AND
LONG LIFE

FACORY
PRECUT WHIP

EASY WHIP
REMOVAL FOR
CAR WASH, ETC.

FULLY
ADJUSTABLE

EXTERIOR
IMPEDANCE
TRANSFER ELEMENT
FOR PEAK
PERFORMANCE

LOW-PROFILE
INTERIOR
ELEMENT

PREMIUM
DUAL SHIELD
LOW-LOSS
COAX CABLE

KG-900 Kūlglass™ Antenna*

The KG-900 antenna for 902–928 MHz is a collinear design featuring 5/8 Wave top element in phase with 1/2 Wave bottom element. The KG-900 operates independent of ground plane considerations, offering a full 3 dB gain. It is available in N and PL-259T connector types.

Kūlglass™ ANTENNAS*—COMPLETE

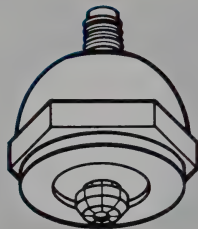
MODEL NUMBER	FREQUENCY RANGE (MHz)	ELEC. TYPE	GAIN	MOUNTING KIT	
				COAX	CONN.*
KG-144-PL	144-148	1/2 Wave	2.4 dB	14' Dual Shield Low-Loss	PL-259T*
KG-220-PL	220-225				PL-259T*
KG-440-N	440-450				N-Male*
KG-440-PL		PL-259T*			
KG-900-N	902-928	5/8 Over 1/2 Wave Collinear	3 dB		N-Male*
KG-900-PL					PL-259T*

*Connectors shipped loose; crimp connector supplied except PL-259 Type.

Kūlglass™ REPLACEMENT PARTS

MODEL NUMBER	FREQUENCY RANGE (MHz)	DESCRIPTION	NOTES
W-KG-144	144-148	Replacement whip for KG-VHF models	Includes upper part of swing arm
W-KG-220	220-225	Replacement whip for KG UHF models	
W-KG-440	440-450	Replacement whip for KG-900 models	Includes upper part of swing arm
W-KG-900	902-928	Replacement whip for KG-900 models	
KG-REINSTALL	n/a	Reinstall kit for all KG products	Includes adhesive, allen wrenches, alcohol wipes and instructions

*Patent Pending



Permanent mount
fits 3/8" hole.
Compatible with
most antennas that
use a 5/16"-24 THDS
stud, including GE,
A/S and other 3/8"
mounts using high
impact molded poly-
carbonate insulators.
LA antennas also fit LM
and JM Series mounts.



LA SERIES

MOBILE Kūlrod® ANTENNAS

The LA series antennas fit "snap-in" mounting hardware sets such as the "dome" style LA type or any other set that provides a 5/16"-24 THDS mounting stud, such as Larsen JM style or LM style.

- Frequency ranges available: 144-450 MHz.
- Electrical types include 1/4 Wave, 5/8 Wave, 5/8 over 1/2 Wave collinear with closed phasing coil,
- and 5/8 over 1/4 Wave collinear with open phasing coil.
- Gain performance ranges from unity to 5 dB; for UHF frequencies, LA offers two types of collinear models ranging from 3 dB to 5 dB in addition to unity gain.
- Mounting hardware includes permanent type, with and without coax, as well as four types of temporary mounts.

LA SERIES

		FREQUENCY RANGE IN MHz						
ELECTRICAL TYPE	GAIN dB	28-30	50-54	144-148	220-225	440-450	902-928	1215-1300
1/4 WAVE	0			●	●	●		
LOADED 1/4 WAVE	0							
1/2 WAVE	2.4							
5/8 WAVE	3			●	●			
5/8 OVER 1/4 WAVE	3					●		
5/8 OVER 1/2 WAVE	5					●		
5/8 OVER 5/8 WAVE	5							



LA ANTENNAS + PERMANENT ROOF HOLE MOUNT KITS

MODEL NUMBER	FREQUENCY RANGE (MHz)	ELEC. TYPE	GAIN	MOUNTING KIT		INCLUDES MODULES		
				COAX	CONN.	COIL/BASE	WHIP	MTG. KIT
LAQ-K	144-450	1/4 Wave	0	17' RG-58	PL-259	Does Not Apply	W-200	LA-K
LA-150-K	144-148	5/8 Wave	3 dB			LA-150-CO	W-490	
LA-220-K	220-225					LA-220-CO	W-320	
LA-440-K	440-450	5/8 Over 1/2 Wave Collinear	5 dB			LA-UHF-BASE	W-154	



LA COILS/BASES + RADIATING ELEMENTS

MODEL NUMBER	FREQUENCY RANGE (MHz)	ELEC. TYPE	GAIN	INCLUDES MODULES		NOTES
				COIL/BASE	WHIP	
Q	144-450	1/4 Wave	0	Does Not Apply	W-200	
LA-150	144-148	5/8 Wave	3 dB	LA-150-CO	W-490	
LA-220	220-225			LA-220-CO	W-320	
LA-440	440-450	5/8 Over 1/2 Wave Collinear	5 dB	LA-UHF-BASE	W-154	

LA COILS/BASES



FIG. A



FIG. B

MODEL NUMBER	FIG.	FREQUENCY RANGE (MHz)	ELEC. TYPE	FOR REPLACEMENT WHIP ORDER MODEL NUMBER:
LA-150-CO*	A	144-148	5/8 Wave	W-490 (Kürod® chrome finish)
LA-220-CO*	A	220-225	5/8 Wave	W-320
LA-UHF-BASE*	B	440-450	Does Not Apply	W-154 for 5/8 Over 1/2 Wave W-144 for 5/8 Over 1/4 Wave

* (LA Coils also fit LM and JM Mounts)

LA RADIATING ELEMENTS

MODEL NUMBER	FIG.	FREQUENCY RANGE (MHz)	ELEC. TYPE	FINISH	FITS COILS/BASES
W-144	D	440-450	5/8 Over 1/4 Wave Collinear	Küirod®	LA-UHF-BASE
W-154	C	440-450	5/8 Over 1/2 Wave Collinear		Does Not Apply
W-200	A	144-450	1/4 Wave		LA-220-CO
W-320	A	220-225	5/8 Wave		Various
W-490	B	Various	Various	Küirod T™	LA-UHF-BASE
W-144B	D	440-450	5/8 Over 1/4 Wave Collinear		Does Not Apply
W-200B	A	144-450	1/4 Wave		Various
W-490B	B	Various	Various		



FIG. A FIG. B



FIG. C FIG. D

LA MOUNTING KITS

LA ANTENNAS ALSO FIT LM & JM MOUNTS

MODEL NUMBER	FIG.	MOUNTING TYPE	COAX SUPPLIED	CONNECTOR SUPPLIED	APPLICATION NOTES
LA-B	A	Mount in 3/8" Hole	None	None	Antenna Mounting Hardware Only
LA-K	B		17' RG-58 A/U	PL-259*	Complete Coax & Connector
LM-MM	C	Magnetic Mount	12' RG-58 A/U	PL-259-Type	Connector Attached
LM-MM-BNC	C			BNC	
LM-TLM	D	Trunk Lid Mount	17' RG-58 A/U	PL-259*	Complete Coax & Connector
LM-GC	E	Gutter Clamp Mount	12' RG-58 A/U	PL-259-Type	Connector Attached
LM-TMB	F	Trunk Gutter Mount	17' RG-58 A/U	PL-259*	Complete Coax & Connector
JM-B	G	Mount in 3/8" Hole	None	None	Antenna Mounting Hardware Only
JM-K	H		17' RG-58 A/U	PL-259*	Complete Coax & Connector

*Connectors shipped loose.



FIG. A

FIG. B

FIG. C

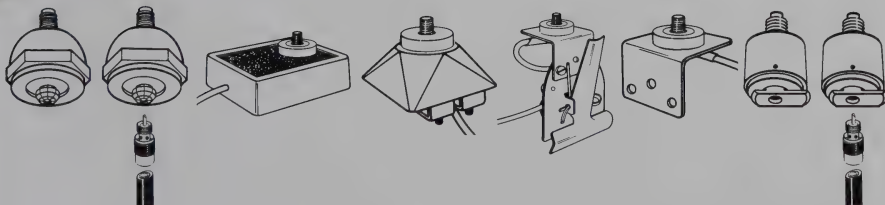
FIG. D

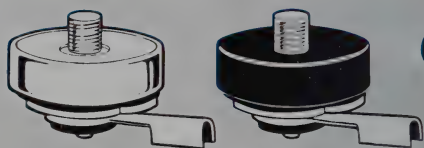
FIG. E

FIG. F

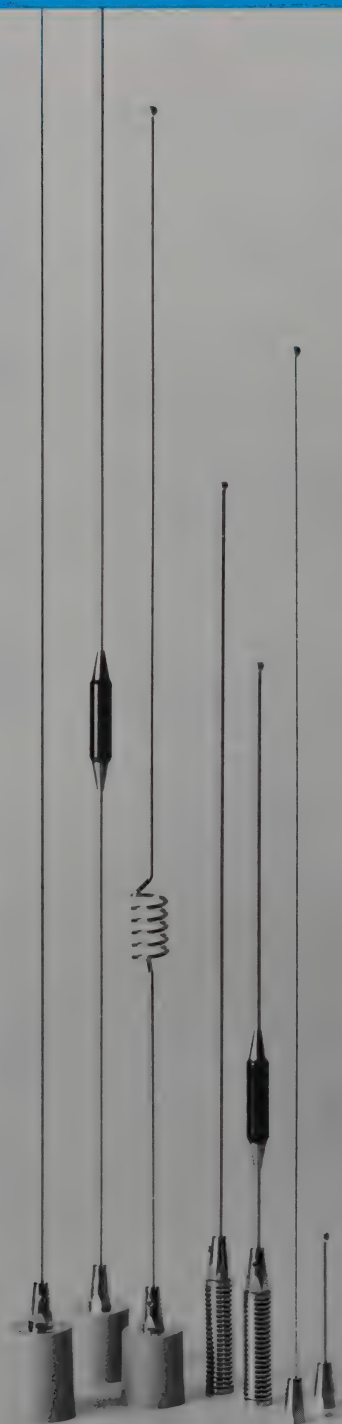
FIG. G

FIG. H





Permanent mount
fits 3/4" hole.
Compatible with
most antennas that
use a 5/16"-24 THDS
stud, including A/S,
DB, etc.



LM SERIES

MOBILE Kūlrod® ANTENNAS

This is the simplest and easiest of all the Larsen Antenna Series to install — only three parts are required. The LM has a low profile and mounts solidly to vehicle or temporary mount for secure fit and lasting service.

- Frequency ranges: 144–928 MHz.
- Electrical types include 1/4 Wave, 5/8 Wave, 5/8 over 1/2 Wave collinear with closed phasing coil, and 5/8 over 1/4 Wave with open phasing coil.
- Gain performance ranges from 3 dB to 5 dB gain in addition to unity gain.
- Whips are available in both Kūlrod® Chrome and Black Kūlrod T™ finishes for maximum performance at all frequencies.
- An extensive selection of mounting hardware and kits provides the perfect match for all applications. Permanent mounts are available in special low-loss kits for optimum performance in higher frequencies with four types of coax available, including low-loss, dual shield coax. Four different temporary mounts complete the selection.

LM SERIES

ELECTRICAL TYPE	GAIN dB	FREQUENCY RANGE IN MHz						
		28-30	50-54	144-148	220-225	440-450	902-928	1215-1300
1/4 WAVE	0			●	●	●	●	
LOADED 1/4 WAVE	0							
1/2 WAVE	2.4							
5/8 WAVE	3			●	●			
5/8 OVER 1/4 WAVE	3					●		
5/8 OVER 1/2 WAVE	5					●	●	
5/8 OVER 5/8 WAVE	5							

LM ANTENNAS + HOLE MOUNT KITS

MODEL NUMBER	FREQUENCY RANGE (MHz)	ELEC. TYPE	GAIN	MOUNTING KIT		INCLUDES MODULES		
				COAX	CONN.	COIL/BASE	WHIP	MTG. KIT
LMQ-K	144-450	1/4 Wave	0	17' RG-58 A/U Coax	PL-259	Does Not Apply	W-200	LM-K
LM-150-K	144-148	5/8 Wave	3 dB			LM-150-CO	W-490	
LM-220-K	220-225	5/8 Wave	3 dB			LM-220-CO	W-320	
LM-440-K	440-450	5/8 Over 1/2 Wave Collinear	5 dB			LM-UHF-BASE	W-154	
LMQ900LLK-PL	902-928	1/4 Wave	0	17' AA-3096 Low-Loss	PL-259-LL	Does Not Apply	W-035	LM-LLK-PL
LMQ900LLK-N					N-Male-LL			LM-LLK-N
LMQ900DSK-PL				17' Low-Loss Dual Shield	PL-259T			LM-DSK-PL
LMQ900DSK-N					N-Male			LM-DSK-N
LM900LLK-PL		5/8 Over 1/2 Wave Collinear	5 dB	17' AA-3096 Low-Loss	PL-259-LL		W-185 with Spring	LM-LLK-PL
LM900LLK-N					N-Male-LL			LM-LLK-N
LM900DSK-PL				17' Low-Loss Dual Shield	PL-259T			LM-DSK-PL
LM900DSK-N					N-Male			LM-DSK-N

LM COILS/BASES + RADIATING ELEMENTS

MODEL NUMBER	FREQUENCY RANGE (MHz)	ELEC. TYPE	GAIN	INCLUDES MODULES		NOTES
				COIL/BASE	WHIP	
Q	144-450	1/4 Wave	0	Does Not Apply	W-200	
Q-900	902-928				W-035	
LM-150	144-148			LM-150-CO	W-490	
LM-220	220-225	5/8 Wave	3 dB	LM-220-CO	W-320	
LM-440	440-450	5/8 Over 1/2 Wave Collinear	5 dB	LM-UHF-BASE	W-154	
LM-900	902-928			Does Not Apply	W-185	Includes Spring

LM COILS/BASES



FIG. A



FIG. B

MODEL NUMBER	FIG.	FREQUENCY RANGE (MHz)	ELEC. TYPE	FOR REPLACEMENT WHIP ORDER MODEL NUMBER:
LM-150-CO	A	144-148	5/8 Wave	W-490 (Kürod® chrome finish) or W-490B (Black Kürod T™ finish)
LM-220-CO	A	220-225		W-320
LM-UHF-BASE	B	440-450	Does Not Apply	W-154 for 5/8 Over 1/2 Wave
				W-144, W-144B for 5/8 Over 1/4 Wave

LM RADIATING ELEMENTS

MODEL NUMBER	FIG.	FREQUENCY RANGE (MHz)	ELEC. TYPE	FINISH	FITS COILS/BASES
W-035	A	902-928	1/4 Wave	Küirod*	Not Available
W-144	D	440-450	5/8 Over 1/4 Wave		LM-UHF-BASE
W-154	C		5/8 Over 1/2 Wave		
W-185	C	902-928	5/8 Over 1/2 Wave Collinear		Does Not Apply
W-200	A	144-450	1/4 Wave		Does Not Apply
W-320	A	220-225	5/8 Wave		LM-220-CO
W-490	B	Various	Various	Küirod T™	Various
W-144B	D	440-450	5/8 Over 1/4 Wave Collinear		LM-UHF-BASE
W-200B	A	144-450	1/4 Wave		Does Not Apply
W-490B	B	Various	Various		Various



FIG. A FIG. B

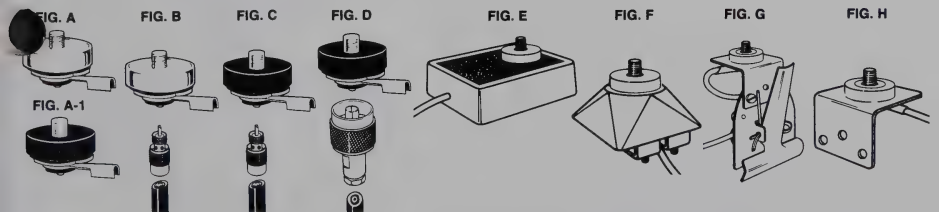


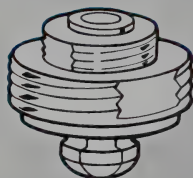
FIG. C FIG. D

LM MOUNTING KITS

MODEL NUMBER	FIG.	MOUNTING TYPE	COAX SUPPLIED	CONNECTOR SUPPLIED*	APPLICATION NOTES
LM-B	A	Mount in 3/4" Hole	None	None	Antenna Mounting Hardware Only
LM-B-800	A-1		None	None	Above Modified for 800-plus MHz
LM-K	B		17' RG-58 A/U	PL-259*	
LM-LLK-PL	C		17' AA-3096 Low-Loss Coax	PL-259-LL*	Low-Loss Kit for 900 MHz*
LM-LLK-N	D		17' Dual Shield Low-Loss Coax	N-Male-LL*	
LM-DSK-PL	C		17' Dual Shield Low-Loss Coax	PL-259T*	Dual Shield Low-Loss Kit for 900 MHz*
LM-DSK-N	D	Magnetic Mount	12' RG-58 A/U	N-Male*	
LM-MM	E		12' RG-58 A/U	PL-259-Type BNC-Male	Connector Attached
LM-MM-BNC	E		12' Dual Shield Low-Loss Coax	N-Male	Dual Shield Low-Loss Kit for 900 MHz. Connector Attached.
LM-MM-DS-N	E	Trunk Lid Mount	12' Dual Shield Low-Loss Coax	N-Male	
LM-TLM	F		17' RG-58 A/U	PL-259*	
LM-GC	G	Gutter Clamp Mount	12' RG-58 A/U	PL-259-Type	Connector Attached
LM-TMB	H	Trunk Gutter Mount	17' RG-58 A/U	PL-259*	

*Connectors shipped loose; crimp connector supplied except PL-259 Type.





Permanent mount
fits 3/8" hole.
Compatible with
all "snap-in" type
hardware.



VHF/UHF DUAL BAND COUPLER

The AD-2/70 bi-directional passive coupler is used with Larsen Dual Band Antennas where one or both bands will be used for transmitting and band splitting is not provided for by a dual band radio. (See page 63 for details.)

NLA SERIES

MOBILE Kūlrod® ANTENNAS

This series is similar to our LA Series, but eliminates the need for the molded "dome" insulator and a braid nut. Installation is simpler and offers a lower profile than the LA Series.

- Frequency ranges: 28–1300 MHz.
- Electrical types include 1/4 Wave, 1/2 Wave and 5/8 Wave types; collinear antennas with either open or closed phasing coils are available to suit cost/performance needs.
- Self-resonant antennas for operation without ground plane are offered from 144–450 MHz.
- Gain performance ranges from unity to 5 dB for UHF frequencies.

NLA offers four types of collinear models ranging from 3 dB to 5 dB gain in addition to unity gain.

- Coils/bases and whips are available in both Kūlrod® Chrome and Black Kūlrod T™ finishes for maximum performance at most frequencies.
- Mounting hardware includes permanent type with and without coax as well as four types of temporary mounts.

NLA SERIES

		FREQUENCY RANGE IN MHz						
ELECTRICAL TYPE	GAIN dB	28-30	50-54	144-148	220-225	440-450	902-928	1215-1300
1/4 WAVE	0			●	●	●		
LOADED 1/4 WAVE	0	●	●					
1/2 WAVE	2.4			●	●	●		
5/8 WAVE	3			●	●			
5/8 OVER 1/4 WAVE	3					●		
5/8 OVER 1/2 WAVE	5					●		
5/8 OVER 5/8 WAVE	5					●		
DUAL BAND	3			●		●		
1/2 OVER 1/2 OVER 1/4 WAVE	5							●

NLA ANTENNAS + HOLE MOUNT KITS

MODEL NUMBER	FREQUENCY RANGE (MHz)	ELEC. TYPE	GAIN	MOUNTING KIT		INCLUDES MODULES		
				COAX	CONN.	COIL/BASE	WHIP	MTG. KIT
NLA-27-K	28-30	Loaded	0	17' RG-58 A/U Coax	PL-259	NLA-27-CO	W-490	NLA-K
NLA-50-K	50-54	1/4 Wave				NLA-50-CO		
NLAQ-K	144-450	1/4 Wave				NLAQ-BASE-1	W-200	
NLA-150-K	144-148	5/8 Wave				NLA-150-CO	W-490	
NLA-220-K	220-225		NLA-220-CO			W-320		
NLA-2/70-K*	144-148 and 440-450	5/8 Wave on VHF Collinear on UHF	2.4 dB and 4 dB				NLA-2/70-CO	
NLA-440-K	440-450	5/8 Over 1/2 Wave Collinear	5 dB		NLA-UHF-BASE	W-154		
NLA-1290-DSK-PL	1215-1300	1/2 Over 1/2 Over 1/4 Wave		17' DS Coax	PL-259-T	NLA-1290-BASE	W-1290	NLA-DSK-PL
NLA-1290-DSK-N		1/4 Wave		N	NLA-DSK-N			

NLA COILS/BASES + RADIATING ELEMENTS

MODEL NUMBER	FREQUENCY RANGE (MHz)	ELEC. TYPE	GAIN	INCLUDES MODULES		NOTES
				COIL/BASE	WHIP	
NLA-27	28-30	Loaded 1/4 Wave	0	NLA-27-CO	W-490	Antenna also operates without a ground plane but with less gain. Gain figures are shown with a ground plane.
NLA-50	50-54			NLA-50-CO		
NLAQ	144-450			NLAQ-BASE-1	W-200	
NLA-150-HW	144-148	1/2 Wave	2.4 dB	NLA-150 HW-CO	W-490	
NLA-220-HW	220-225			NLA-220 HW-CO	W-320	
NLA-440 HW	440-450	5/8 Over 5/8 Wave	5 dB	NLA-406 HW-CO NLA-420 HW-CO NLA-440 HW-CO NLA-450 HW-CO	W-160	
NLA-150	144-148	5/8 Wave	3 dB	NLA-150-CO	W-490	
NLA-220	220-225			NLA-220-CO	W-320	
NLA-440	440-450	5/8 Over 1/2 Wave Collinear	5 dB	NLA-UHF-BASE	W-154	
NLA-1290	1215-1300	1/2 Over 1/2 Over 1/4 Wave	5 dB	NLA-1290-BASE	W-1290	
NLA-2/70*	144-148 and 440-450	5/8 Wave on VHF Collinear on UHF	2.4 dB and 4 dB	NLA-2/70-CO	W-2/70	

NLA RADIATING ELEMENTS

MODEL NUMBER	FIG.	FREQUENCY RANGE (MHz)	ELEC. TYPE	FINISH	FITS COILS/BASES
W-144	D	440-450	5/8 Over 1/4 Wave Collinear	Külrod®	NLA-UHF-BASE
W-154	C	440-450	5/8 Over 1/2 Wave Collinear		NLA-440 HW-CO
W-160	C	440-450	5/8 Over 5/8 Wave		All Coils Noted Immediately Above
W-170	A	440-450	1/2 Wave		NLAQ-BASE-1
W-200	A	144-450	1/4 Wave		NLA-220-CO or NLA-220 HW-CO
W-320	A	220-225	5/8 or 1/2 Wave		Various
W-490	B	Various	Various	Külrod T™	NLA-UHF-BASE
W-144B	D	440-450	5/8 Over 1/4 Wave		NLAQ-BASE-1
W-200B	A	144-450	1/4 Wave		Various
W-490B	B	Various	Various		NLA-1290-BASE
W-1290	E	1215-1300	1/2 Over 1/2 Over 1/4 Wave	Külrod®	NLA-2/70-CO
W-2/70	C	144-148 and 440-450	5/8 Wave on VHF Collinear on UHF		

*See Page 63 for AD-2/70 Duplexer-Coupler.

NLA COILS/BASES



FIG. A



FIG. B



FIG. C

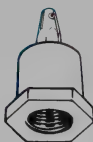


FIG. D

MODEL NUMBER	FIG.	FREQUENCY RANGE (MHz)	ELEC. TYPE	FOR REPLACEMENT WHIP ORDER MODEL NUMBER:
NLA-27-CO	A	28-30	Loaded 1/4 Wave	W-490
NLA-50-CO	A	50-54		
NLA-150-CO	B	144-148	5/8 Wave	W-320 or W-320B
NLA-220-CO	B	220-225		
NLA-150 HW-CO	B	144-148	1/2 Wave	W-490 or W-490B
NLA-220 HW-CO	B	220-225		
NLA-440 HW-CO	C	440-450	5/8 Over 5/8 Wave Collinear	W-160 Collinear (or W-170 for 1/2 Wave)
NLAQ-BASE-1	D	1/4 Wave (144-450)		
NLA-UHF-BASE	C	5/8 Over	Does Not Apply	W-154
		1/2 Wave (440-450)		
		5/8 Over 1/4 Wave (440-450)		
NLA-1290-BASE	D	1215-1300	1/2 Over 1/2 Over 1/4 Collinear	W-1290
NLA-2/70-CO	A	(144-148) and (440-450)	5/8 Wave on VHF Collinear on UHF	W-2/70

NLA MOUNTING KITS

MODEL NUMBER	FIG.	MOUNTING TYPE	COAX SUPPLIED	CONNECTOR SUPPLIED*	APPLICATION NOTES
NLA-B	A	Mount in 3/8" Hole	None	None	Mounting Hardware Only
NLA-K	B		17' RG-58 A/U	PL-259	Complete Coax & Connector
NLA-MM	C	Magnetic Mount	12' RG-58 A/U	PL-259-Type	Connector Attached
NLA-MM-BNC	C			BNC-Male	
NLA-TLM	D	Trunk Lid Mount	17' RG-58 A/U	PL-259*	Complete Coax & Connector
NLA-GC	E	Gutter Clamp Mount	12' RG-58 A/U	PL-259-Type	Connector Attached
NLA-TMB	F	Trunk Gutter Mount	17' RG-58 A/U	PL-259*	Complete Coax & Connector

*Connectors shipped loose unless otherwise noted.



FIG. A



FIG. B

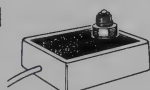


FIG. C

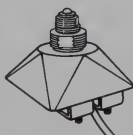


FIG. D



FIG. E

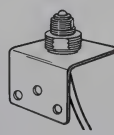
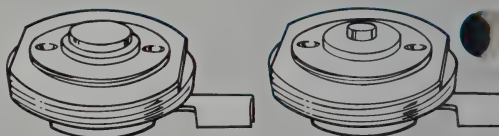


FIG. F



**Permanent mount
fits a 3/4" hole.
Compatible with
Motorola TAD/TAE
products and most
other antenna
makes.**



VHF/UHF DUAL BAND COUPLER

The AD-270 bi-directional passive coupler is used with Larsen Dual Band Antennas where one or both bands will be used for transmitting and band splitting is not provided for by a dual band radio. (See page 63 for details.)

NMO SERIES

MOBILE Kūlrod® ANTENNAS

The NMO series offers the greatest mounting selection with over 1,500 application combinations available! And with Larsen's Stock Option™ System, you can greatly expand your inventory to meet every application need while you reduce stocking costs by having available only the modules you use most.

- Frequency ranges available:
28–1300 MHz.
- Electrical types include 1/4 Wave, 1/2 Wave and 5/8 Wave types; collinear antennas available with either open or closed phasing coils to fit exact cost/performance/durability needs.
- Self-resonant antennas for operation without ground plane are offered from 144–450 MHz.
- Gain performance ranges from unity to 5 dB; for UHF frequencies,

NMO offers four types of collinear models ranging from 3 dB to 5 dB gain in addition to unity gain.

- Coils/bases and whips are available in both Kūlrod® Chrome and Black Kūlrod T™ finishes for maximum performance at all frequencies.
- An extensive selection of mounting hardware and kits provides the perfect match for all applications. Permanent mounts are available in special low-loss kits for optimum performance in higher frequencies with four types of coax available, including low-loss dual shield coax. Four different temporary mounts complete the selection.

No matter what your needs, NMO will most likely meet them. Call or write Larsen for applications assistance if ever a question on compatibility or suitability arises.

NMO SERIES

ELECTRICAL TYPE	GAIN dB	FREQUENCY RANGE IN MHz						
		28-30	50-54	144-148	220-225	440-450	902-928	1215-1300
1/4 WAVE	0		●	●	●	●	●	
LOADED 1/4 WAVE	0	●	●					
1/2 WAVE	2.4			●	●	●		
5/8 WAVE	3			●	●			
5/8 OVER 1/4 WAVE	3					●		
5/8 OVER 1/2 WAVE	5					●	●	
5/8 OVER 5/8 WAVE	5					●		
DUAL BAND	3			●		●		
1/2 OVER 1/2 OVER 1/4 WAVE	5							●

NMO ANTENNAS + HOLE MOUNT KITS

MODEL NUMBER	FREQUENCY RANGE (MHZ)	ELEC. TYPE	GAIN	MOUNTING KIT		INCLUDES MODULES			
				COAX	CONN.	COIL/BASE	WHIP	MTG. KIT	
NMO-27-K	28-30	Loaded 1/4 Wave	0 dB	17' RG-58 A/U Coax	PL-259	NMO-27-CO	W-490	NMO-K	
NMO-50-K	50-54					NMO-50-CO			
NMOQ-K	144-450	1/4 Wave	NMOQ-BASE-1			W-200			
NMOQ-SPEC-K	144-450		Complete						
NMO-150-K	144-148	5/8 Wave	3 dB			NMO-150-CO	W-490		
NMO-220-K	220-225					NMO-220-CO	W-320		
NMO-2/70-K*	144-148 440-450	5/8 Wave on VHF Collinear on UHF	2.4 dB and 4 dB	PL-259	NMO-2/70-CO	W-2/70			
NMO-440-K	440-450	5/8 Over 1/2 Wave	5 dB	PL-259	NMO-UHF-BASE	W-154			
NMOQ900LLK-PL	902-928	1/4 Wave	0 dB	17' AA-3096 Low-Loss	PL-259-LL	NMOQ-BASE-3	W-035	NMO-LLK-PL	
NMOQ900LLK-N				17' Dual Shield Low-Loss	PL-259T			N-Male-LL	NMO-LLK-N
NMOQ900DSK-PL		5/8 Over 1/2 Wave Collinear	5 dB	17' AA-3096 Low-Loss	PL-259-LL		W-195 with Spring	NMO-DSK-PL	
NMOQ900DSK-N				17' Dual Shield Low-Loss	PL-259T			N-Male	NMO-DSK-N
NMO900LLK-PL				17' Dual Shield Low-Loss	PL-259T			N-Male-LL	NMO-LLK-PL
NMO900LLK-N				17' Dual Shield Low-Loss	PL-259T			N-Male	NMO-LLK-N
NMO900DSK-PL				17' Dual Shield Low-Loss	PL-259T			N-Male	NMO-DSK-PL
NMO900DSK-N				17' Dual Shield Low-Loss	PL-259T			N-Male	NMO-DSK-N
NMO1290DSK-PL	1215-1300	1/2 Over 1/2 Over 1/4 Wave	5 dB	17' Dual Shield Low-Loss	PL-259T N	NMO-1290-BASE	W-1290	NMO-K	
NMO1290DSK-N		1/2 Over 1/2 Over 1/4 Wave		17' Dual Shield Low-Loss					

NMO COILS/BASES + RADIATING ELEMENTS

MODEL NUMBER	FREQUENCY RANGE (MHz)	ELEC. TYPE	GAIN	INCLUDES MODULES		NOTES
				COIL/BASE	WHIP	
NMO-27	28-30	Loaded 1/4 Wave	0 dB	NMO-27-CO	W-490	Antenna also operates without a ground plane but with less gain. Gain figures are shown with a ground plane.
NMO-50	50-54			NMO-50-CO		
NMOQ	144-450	1/4 Wave	0 dB	NMOQ-BASE-1	W-200	
NMOQ-SPEC	144-450			Complete		
NMOQ-900	902-928	1/2 Wave	2.4 dB	NMOQ-BASE-3	W-035	
NMO-150-HW	144-148			NMO-150HW-CO	W-490	
NMO-220-HW	220-225	5/8 Wave	3 dB	NMO-220HW-CO	W-320	
NMO-440-HW	440-450			NMO-440HW-CO	W-160	Includes Spring
NMO-150	144-148	5/8 Over 1/2 Wave Collinear	5 dB	NMO-150-CO	W-490	
NMO-220	220-225			NMO-220-CO	W-320	
NMO-440	440-450	1/2 Over 1/2 Over 1/4 Wave Collinear	5 dB	NMO-UHF-BASE	W-154	
NMO-900	902-928			NMOQ-BASE-3	W-195	
NMO-1290	1215-1300	1/2 Over 1/2 Over 1/4 Wave Collinear	5 dB	NMO-1290-BASE	W-1290	
NMO-2/70*	144-148 440-450	5/8 Wave on VHF Collinear on UHF	2.4 dB and 4 dB	NMO-2/70-CO	W-2/70	

*See Page 63 for AD-2/70 Duplexer-Coupler.

NMO COILS/BASES



FIG. A



FIG. B



FIG. C



FIG. D



FIG. E

MODEL NUMBER	FIG.	FREQUENCY RANGE (MHz)	ELEC. TYPE	COIL COLOR	FOR REPLACEMENT WHIP ORDER MODEL NUMBER:
NMO-27-CO	A	28-30	Loaded 1/4 Wave	Gray	W-490
NMO-50-CO	A	50-54			
NMO-150-CO	B	144-148	5/8 Wave	Gray	W-320 or W-320B
NMO-220-CO	B	220-225			
NMO-27-BCO	A	28-30	Loaded 1/4 Wave	Black	W-490 or W-490B
NMO-50-BCO	A	50-54			
NMO-150-BCO	B	144-148	5/8 Wave	Black	W-320 or W-320B
NMO-220-BCO	B	220-225			
NMO-150HW-CO	B	144-148	1/2 Wave	Gray	W-490
NMO-220HW-CO	B	220-225			
NMO-440HW-CO	C	440-450	5/8 Over 5/8 Wave Collinear or 1/2 Wave	Gray	W-160 Collinear (or W-170 for 1/2 Wave)
NMO-150HW BCO	B	144-148	1/2 Wave	Black	W-490 or W-490B
NMO-220HW BCO	B	220-225			
NMO-440HW BCO	C	440-450	5/8 Over 5/8 Wave Collinear	Black	W-320 or W-320B
NMOQ-BASE-1	D	1/4 Wave 144-928	Does Not Apply	Gray	W-160 Collinear (or W-170 for 1/2 Wave)
NMOQ-BASE-1B	D	5/8 Over 1/2 Wave Collinear (902-928)		Black	
NMOQ-BASE-3	D	1/4 Wave (902-928)		Gray	
NMOQ-BASE-3B	D	5/8 Over 1/2 Wave Collinear (902-928)		Black	
NMO-UHF-BASE	E	5/8 Over 1/2 Wave Collinear (440-450)		Gray	
NMO-UHF BASE B	E	5/8 Over 1/4 Wave Collinear (440-450)		Black	
NMO-1290-BASE	D	1215-1300	1/2 Over 1/2 Over 1/4 Collinear	Black	W-1290
NMO-270-CO	A	144-148 440-450	5/8 Wave on VHF Collinear on UHF	Gray	W-270

NMO RADIATING ELEMENTS



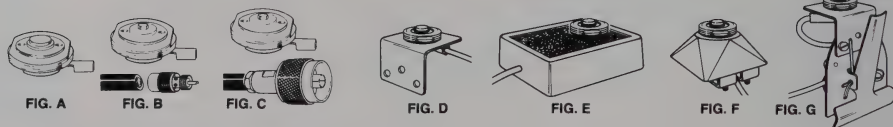
MODEL NUMBER	FIG.	FREQUENCY RANGE (MHz)	ELEC. TYPE	FINISH	FITS COILS/BASES
W-035	A	902-928	1/4 Wave	Kūlrod®	NMOQ-BASE-3 or NMOQ-BASE-3B
W-144	D	440-450	5/8 Over 1/4 Wave Collinear		NMO-UHF-BASE or NMO-UHF-BASE-B
W-154	C	440-450	5/8 Over 1/2 Wave Collinear		NMO-440HW-CO or NMO-440HW-BCO
W-160	C	440-450	5/8 Over 5/8 Wave Collinear		All Coils Noted Immediately Above
W-170	A	440-450	1/2 Wave		NMOQ-BASE-3 or NMOQ-BASE-3B
W-195	C	902-928	5/8 Over 1/2 Wave Collinear		NMOQ-BASE-1 or NMOQ-BASE-1B
W-200	A	144-148	1/4 Wave		NMO-220-CO NMO-220-BCO NMO-220HW-CO NMO-220HW-BCO
W-320	A	220-225	5/8 or 1/2 Wave		Various
W-490	B	Various	Various		Chrome Base
W-NMOQ-SPEC	A	144-148	1/4 Wave		NMO-UHF-BASE or NMO-UHF-BASE B
W-144B	D	440-450	5/8 Over 1/4 Wave Collinear	Kūlrod T™	NMOQ-BASE-1 or NMOQ-BASE-1B
W-200B	A	144-148	1/4 Wave		Various
W-490B	B	Various	Various	Kūlrod®	NMO-270-CO
W-270	C	144-148 440-450	5/8 on VHF Collinear on UHF		NMO-1290-BASE
W-1290	E	1215-1300	1/2 Over 1/2 Over 1/4 Wave	Kūlrod T™	

NMO MOUNTING KITS



MODEL NUMBER	FIG.	MOUNTING TYPE	COAX SUPPLIED	CONNECTOR SUPPLIED*	APPLICATION NOTES
NMO-B	A	Mount in 3/4" Hole	None	None	Antenna Mounting Hardware Only
NMO-B-800	A		17' RG-58 A/U	PL-259*	Above Modified for 800-plus MHz
NMO-K	B		17' AA-3096 Low-Loss Coax	PL-259-LL*	Complete Coax & Connector
NMO-LLK-PL	B		17' Dual Shield Low-Loss Coax	N-Male-LL*	Low-Loss Kit for 800-plus MHz
NMO-DSK-PL	B		17' Dual Shield Low-Loss Coax	PL-259T*	Dual Shield
NMO-DSK-N	C		17' Dual Shield Low-Loss Coax	N-Male*	Low-Loss Kit for 800-plus MHz
NMO-MM	E	Magnetic Mount	12' RG-58 A/U	PL-259-Type BNC-Male	Connector Attached
NMO-MM-BNC	E		12' Dual Shield Low-Loss Coax	N-Male	Dual Shield
NMO-MM-DS-N	E	Trunk Lid Mount	17' RG-58 A/U	PL-259*	Low-Loss Kit for 800-plus MHz
NMO-TLM	F		17' RG-58 A/U	PL-259*	Complete Coax & Connector
NMO-GC	G	Gutter Clamp Mount	12' RG-58 A/U	PL-259-Type	Connector Attached
NMO-TMB	D	Trunk Gutter Mount	17' RG-58 A/U	PL-259*	Complete Coax & Connector

*Connectors shipped loose; crimp connector supplied except PL-259 Type.



*Connectors shipped loose; crimp connector supplied except PL-259 Type.

SPECIALIZED

ANTENNAS AND MOUNTING HARDWARE

OM SERIES

This antenna is especially suitable for thicker-than-normal surfaces. The special self-mounting base is attached with three nuts and bolts (or self-tapping screws). Since it is self-resonant and works well without a ground plane, it's ideal for fiberglass as well as metal surfaces. The RG-58 A/U coax and mounting hardware is integral with the coil. UHF versions are offered as a 5/8 over 5/8 Wave collinear type, but they also can be used with a single 1/2 Wave element for low clearance situations.

OM SERIES

FREQUENCY RANGE IN MHz

ELECTRICAL TYPE	GAIN dB	50- 54	144- 148	220- 225	440- 450
1/2 WAVE	2.4		●	●	●
5/8 OVER 5/8 WAVE	5				●



VHF/UHF DUAL BAND COUPLER

The AD-2/70 bi-directional passive coupler is used with Larsen Dual Band Antennas where one or both bands will be used for transmitting and band splitting is not provided for by a dual band radio. (See page 63 for details.)



MHW SERIES

The MHW Series is typically used directly on the radio itself and attaches to any SO-239 UHF connector. It also makes an excellent antenna for boat mast installation as well as other marine or fiberglass installations. The base impedance transformer makes it self-resonant and thus works well without a ground plane. A complete range of mounting hardware is available.

MHW SERIES		FREQUENCY RANGE IN MHz			
ELECTRICAL TYPE	GAIN dB	50- 54	144- 148	220- 225	440- 450
1/2 WAVE	2.4		•	•	•
5/8 OVER 5/8 WAVE	5				•

PHW SERIES

The standard PHW antenna is designed for easy portability and setup in emergency situations. When necessary, its flexible 1/2 Wave radiating element can be hung from a tree, taped to or draped outside a window, etc. It delivers unity gain without a ground plane and mates with a PL-259 connector. Standard available frequency range is 144–450 MHz with other frequency ranges available by special request.

PHW SERIES		FREQUENCY RANGE IN MHz			
ELECTRICAL TYPE	GAIN dB	50- 54	144- 148	220- 225	440- 450
1/2 WAVE	2.4		•	•	•
5/8 OVER 5/8 WAVE	5				•

PO SERIES

Mechanically similar to the MHW series, these high performance antennas use a 5/8 or 5/8 over 1/2 Wave configuration and are recommended only with a suitable ground plane.

PO SERIES		FREQUENCY RANGE IN MHz			
ELECTRICAL TYPE	GAIN dB	50- 54	144- 148	220- 225	440- 450
1/4 WAVE	0		•	•	•
5/8 WAVE	3		•	•	
DUAL BAND	3		•	•	

SPECIAL 1/4 WAVE

These antennas are usually applied to special purpose transmitters, receivers or portable transceivers. All feature high performance Kūlrod® chrome finish whips and operate in a 144–450 MHz range.

- PQ mounts to SO-239 female UHF connectors such as supplied on PO-MM, PO-GC and BSA-K mounting hardware.
- BNCO mounts to BNC female connectors.
- TNCO mounts to TNC female connectors.
- HTQ mounts to 5/16"-32 THDS female socket commonly found on Motorola HT-220 and other similar portables.

OM ANTENNAS (SELF-MOUNTING)

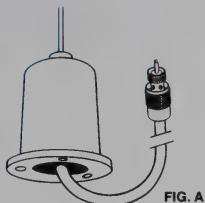


FIG. A

MODEL NUMBER	FIG.	FREQUENCY RANGE (MHz)	ELEC. TYPE	GAIN**	INCLUDES MODULES	
					COIL*	WHIP
OM-150-K	A	144-148	1/2 Wave	2.4 dB	OM-150-CO	W-490
OM-220-K	A	220-225			OM-220-CO	W-320
OM-440-K	A	440-450	5/8 Over 5/8 Wave	5 dB	OM-440-CO	W-160

*17' RG-58 A/U coax is internally attached to coil. Unit supplied with PL-259 connector.

**Gain shown is when mounted on a ground plane of a 1/2 Wave diameter. Without a ground plane, gain is unity for 1/2 Wave type and 2 dB for 5/8 over 5/8 Wave type.

MHW, PHW and PO ANTENNAS



FIG. A



FIG. B



FIG. C

MODEL NUMBER	FIG.	FREQUENCY RANGE (MHz)	ELEC. TYPE	GAIN	INCLUDES MODULES	
					COIL/BASE	WHIP
MHW-150	A	144-148	1/2 Wave	2.4 dB**	MHW-150-CO	W-490
MHW-440	A	440-450	5/8 Over 5/8 Wave	5 dB**	MHW-440-CO	W-161
PHW-150	B	144-148	1/2 Wave	2.4 dB**	PHW-150-CO	W-PHW
PO-150	C		5/8 Wave	3 dB	PO-150-CO	W-490
PO-440	C	440-450	5/8 Over 1/2 Wave	5 dB	PO-UHF-CO	W-155
PO-270*	A	144-148 440-450	5/8 Wave on VHF Collinear on UHF	2.4 dB and 4 dB	PO-270-CO	W-270

*See Page 63 for AD-270 Duplexer-Coupler.

**Gain shown is when mounted on a ground plane of a 1/2 Wave diameter. Without a ground plane, gain is unity for 1/2 Wave type and 2 dB for 5/8 over 5/8 Wave type.

SPECIAL 1/4 WAVE ANTENNAS



FIG. A



FIG. B



FIG. C

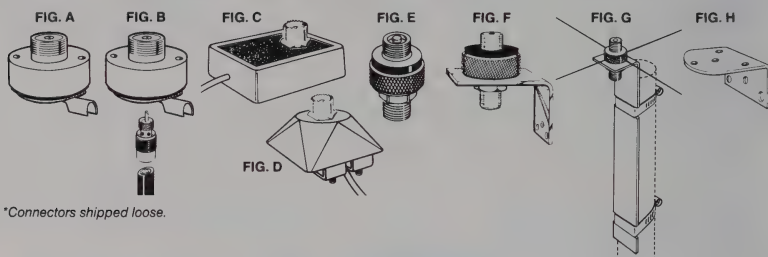


FIG. D

MODEL NUMBER	FIG.	FREQUENCY RANGE (MHz)	ELEC. TYPE	MATES WITH	REPLACEMENT WHIP
PQ	A	144-450	1/4 Wave Unity Gain	SO-239 Female Conn.	W-200
BNCQ	B			BNC Female Conn.	
TNCQ	C			TNC Female Conn.	
HTQ	D			5/16"-32 THDS Female	

SPECIALIZED MOUNTING KITS TO FIT MHW and PO SERIES ANTENNAS

MODEL NUMBER	FIG.	MOUNTING TYPE	COAX SUPPLIED	CONNECTOR SUPPLIED*	APPLICATION NOTES
PO-B	A	Hardware Only	None	None	For RG-58 Coax
PO-K	B	Hole Mount	17" RG-58 A/U	PL-259*	Complete Coax and Connector
PO-MM	C	Magnetic Mount	12" RG-58 A/U	PL-259 Type	Connector Attached
PO-TLM	D	Trunk Lid Mount	17" RG-58 A/U	PL-259*	
BA	E	Bulkhead Mounting	None	None	Hardware Only
SBK	F	Marine Mast Mounting	None	None	Hardware Only
BSA-K	G	Converts Mobile Antenna to Ground Plane Type	None	None	Hardware Only
TMB-OM	H	Mtg. Bracket for OM Antenna	None	None	Hardware Only



*Connectors shipped loose.

SPECIALIZED ANTENNAS COILS/BASES

MODEL NUMBER	FREQUENCY RANGE (MHz)	ELEC. TYPE	COIL COLOR	REPLACEMENT WHIPS
MHW-150-CO	144-148	1/2 Wave	Gray	W-490
MHW-440-CO	440-450	5/8 Over 5/8 Wave		W-161
PO-150-CO	144-148	5/8 Wave		W-490
PO-UHF-BASE	440-450	5/8 Over 1/2 Wave		W-155
OM-150-CO	144-148	1/2 Wave		W-490
OM-220-CO	220-225	1/2 Wave		W-320
OM-440-CO	440-450	5/8 Over 5/8 Wave		W-160
PHW-150-CO	144-148	1/2 Wave		W-PHW
PO-2/70-CO	144-148 440-450	5/8 Wave on VHF Collinear on UHF		W-2/70

SPECIALIZED RADIATING ELEMENTS

MODEL NUMBER	FIG.	FREQUENCY RANGE (MHz)	ELEC. TYPE	FINISH	FITS COILS/BASES
W-200	A	144-450	1/4 Wave	Kürod *	BNCQ, HTQ, PQ, Q
W-200B	A			Kürod T™	
W-320	A	220-225	1/2 Wave	Kürod *	OM-220-CO
W-490	B	Various	Various	Kürod *	Various
W-490B	B			Kürod T™	
W-155	C	440-450	5/8 Over 1/2 Wave	Kürod *	PO-450-CO
W-160	C	440-450	5/8 Over 5/8 Wave		OM-440-CO
					OM-450-CO & MHW-450-CO
					OM-470-CO
W-170	A	440-450	1/2 Wave		Various
W-PHW	D	144-148	1/2 Wave	PHW-150-CO	
W-2/70	C	144-148 440-450	5/8 on VHF Collinear on UHF	Kürod *	PO-2/70-CO

Kūlduckie® SERIES

Whether a handheld radio is used at the top of Mt. Everest, down in a gold mine in Equatorial Africa, or just covering a downtown construction site, Kūlduckie® portable antennas are designed with premier performance in mind.

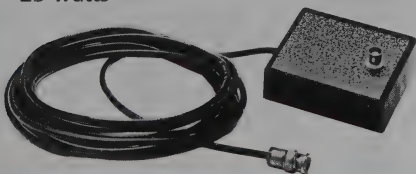
Kūlduckie® antennas are engineered to survive the twists, flexes and contortions of rugged, everyday use under the most demanding conditions. The critical connection between the radiating element and mount is reinforced with a solid copper sleeve. And just the right coverings are used for top performance and maximum protection. For example, helical models use combinations of polyolefin and PVC for optimal low-loss performance, good looks and durability.

Efficient and accurate performance are built into every Kūlduckie® antenna. Every fact of construction and materials selection produce uncompromising quality. And all Kūlduckie® antennas are individually precision-tuned at the factory for maximum performance right out of the box.

Choose from six electrical styles, ranging from 144–450 MHz, with ten mounting types to mate with all popular handheld radios.

SPECIFICATIONS:

- Impedance 50 Ohm
- 25 Watts



TRANSFORM YOUR PORTABLE RADIO INTO A MOBILE RADIO.

The Larsen BNC-TO-BNC Magnetic Mount allows a handheld radio to be operated from inside a moving vehicle. The BNC-male antenna is attached to the BNC-female fitted magnetic mount, placed on the top of the vehicle, and the magnetic mount cable is attached to the radio's BNC female fitting.



ELECTRICAL STYLES

HELICAL

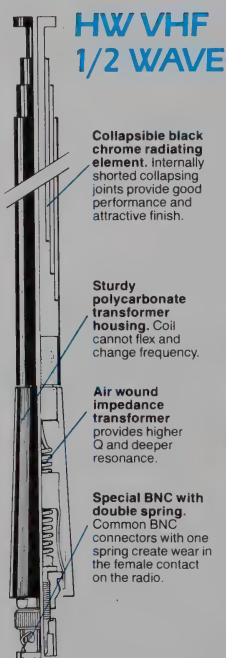
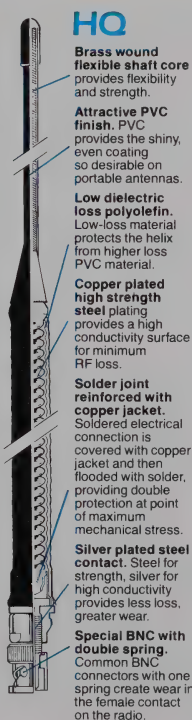
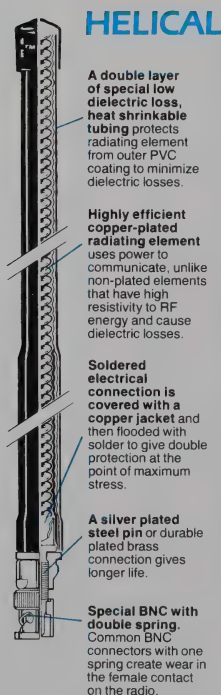
This most commonly used style is available in the widest range of frequencies, 144–450 MHz, and is carefully made for top performance. Helical antennas are wound with .050" steel wire and jacketed with copper plating for best performance. Coverings include polyolefin for low dielectric loss and an outer wrap of PVC for good looks and rugged wear.

HQ HELICAL 1/4 WAVE

For VHF applications requiring peak performance in the 144–148 MHz range while tolerating a length slightly longer than helical types. This unit provides an excellent compromise for many applications. It has a lower helical section with the upper element made from brass wound cable with a flexible shaft core to prevent breakage or brittleness. The HQ operates as a loaded 1/4 Wave antenna.

2/70 DUAL BAND

The 2/70 series Külduckie® Portable Antenna offers superb performance for the new dual band (2 Meter / 70 Centimeter) hand held radios. The antenna operates as a full 1/4 Wave at 440–450 MHz and a loaded 1/4 Wave at 144–148 MHz. Construction elements include brass wound steel flexible core radiating element. The loading coil is housed in sturdy polycarbonate plastic for long life.



HW 1/2 WAVE

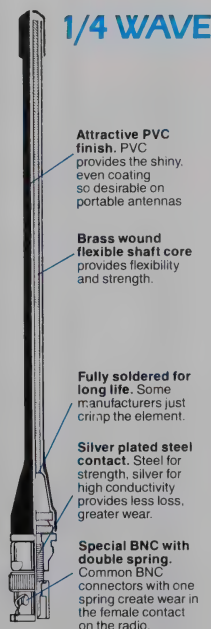
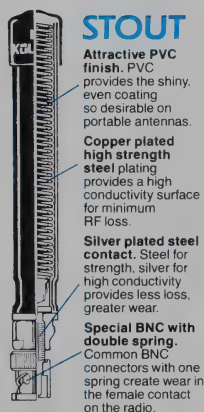
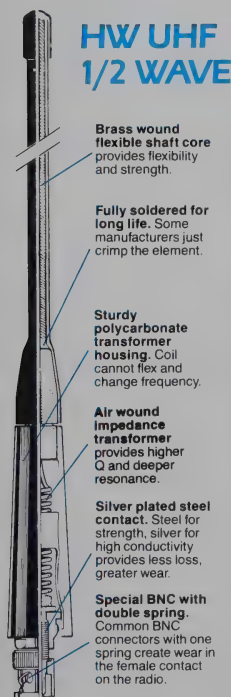
For VHF or UHF applications requiring maximum performance, the HW series is unmatched. It employs a resonant 1/2 Wave design that allows it to operate independently of radio ground plane, and generates performance equal to a full 1/4 Wave on a perfect ground plane. The rigid impedance transformer at the base contributes to optimum performance and adds extra strength. The HW-VHF model features a telescoping, black chrome-plated whip. The HW-UHF model features a 1/2 Wave whip with construction similar to the 1/4 Wave model. Both mount with male BNC connectors for easy on and off.

STOUT HELICAL

The slightly wider diameter and closer pitch of this helical type antenna produces a short, compact antenna. This style comes in VHF frequencies of 144–148 MHz and is made with the same high quality materials as the standard helical Kūlduckie® Antenna.

1/4 WAVE

The full 1/4 Wave style is a high performance antenna for UHF ranges of 440–450 MHz. It's constructed with a flexible steel core and electrically efficient brass wound cable. This special, flexible cable design assures excellence and durability under the most demanding conditions.



16"

15"

14"

13"

12"

11"

10"

9"

8"

7"

6"

5"

4"

3"

2"

1"

0"

Külduckie™
Portable Antennas
 are shown fitted
 with standard BNC
 male connector.

Other connector
 types available
 upon request are
 shown at right.

Contact dealer
 for price and
 availability.



HW
(VHF)



HW
(UHF)



HQ
(VHF)



1/4 WAVE
(UHF)



STOUT
(VHF)



HELICAL
(VHF-UHF)



KD4
2/70

RADIO BRAND MOUNT DESC. & THREAD SIZE

Motorola:
 All HT, MT
 & MF Types
 5/16"-32 THDS
 1/2" Long



KD1/KD11

Motorola:
 MX Type
 1/4"-32 THDS
 3/16" Long



KD2/KD12

Any Radio
 with TNC
 Output: Wilson,
 Tamaphone
 Standard
 TNC Male



KD3/KD13

Any Radio
 with BNC
 Output: Wilson,
 Tempo
 Standard
 BNC Male



KD4/KD14

General
 Electric:
 PE Series,
 MVP Series
 7/16"-40 THDS
 Female



KD5/KD15

General
 Electric:
 PR Series
 1/4"-32 THDS
 3/8" Long



KD6/KD16

Repco,
 Standard
 5/16"-32 THDS
 3/8" Long



KD7/KD17

General
 Electric
 MPR
 Output
 #12-28
 THDS



KD8/KD18

Any Radio
 with
 SO-239
 Standard
 PL-259
 Connector



KD9/KD19

Repco,
 RPX
 1/4" x 28 THDS
 x 1" Stud



KD10/KD20

Kūlduckie® Antennas

HW 1/2 WAVE

MODEL NUMBER	FREQ. (MHz)	WHIP TYPE
KD14-2M-HW	144-148	Collapsible
KD14-440-HW	440-450	1/2 Wave
KD14-2M-WHIP	144-148	Replacement Collapsible
HW Series Antennas can be provided on other frequency bands to fit BNC, TNC, or PL-259 equipped radios. Contact factory with any application.		

Kūlduckie® Antennas

HQ HELICAL 1/4 WAVE

MODEL NUMBER	FREQ. (MHz)	WHIP TYPE
KD4-136-HQ*	144-148	Blue
KD4-146-HQ	144-148	Green

Kūlduckie® Antennas

DUAL FREQUENCY 2 METER/70 CENTIMETER

MODEL NUMBER	FREQ. (MHz)	WHIP TYPE
KD4-2/70	144-148 and 440-450	Black

*For ICOM Radios

Kūlduckie® Antennas

1/4 WAVE

MODEL NUMBER	FREQ. (MHz)	WHIP TYPE
KD14-445	440-450	Black

Kūlduckie® Antennas

STOUT HELICAL

MODEL NUMBER	FREQ. (MHz)	WHIP TYPE
KD4-136-ST*	144-148	Blue
KD4-146-ST	144-148	Green

Kūlduckie® Antennas

HELICAL

MODEL NUMBER	FREQ. (MHz)	WHIP TYPE
KD4-136*	144-148	Blue
KD4-146	144-148	Green
KD4-445	440-450	Yellow

LARSEN BASE STATION ANTENNAS

Larsen Base Station Antennas are engineered to provide lasting, superlative performance under the most demanding field conditions. And we support the electrical and mechanical integrity of every antenna, cable connect and accessory with our no nonsense six-month warranty. Plus, we make stocking less costly and your operations more profitable with our Stock Option™ Modular Inventory System that trims the fat off your inventory without costing a penny more.

LARSEN OMNI-DIRECTIONAL ANTENNAS

A complete selection is available from VHF through 900-plus MHz. Larsen's attention to every electrical and mechanical detail makes them as quick and easy to install as well as superior in operating performance.

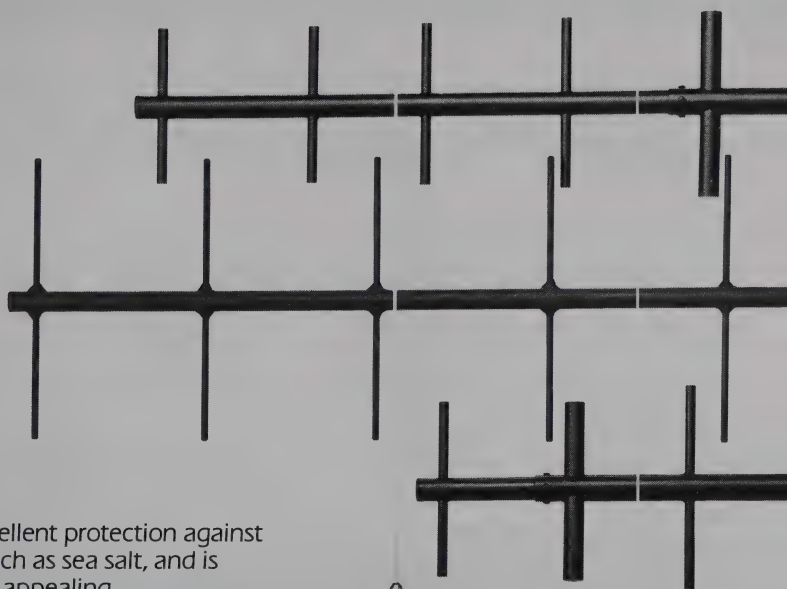
Kūlrod® Plating Systems

All Larsen Omni-Directional Antennas feature exclusive Kūlrod® or Kūlrod T™ plating systems for unmatched performance. Each Kūlrod® antenna has a high tensile strength, 17-7PH stainless steel rod at its core. It provides the right combination of strength and flexibility to minimize radiation pattern distortion and still endure the stress of rugged use. A

thin layer of nickel is next applied, followed by a thick layer of copper for superior, high efficiency conductivity. Two finishes are finally applied to assure maximum power transformed into signal — not heat.

The Chrome Finish Kūlrod® Whip has thin coats of nickel and chrome over its copper layer to provide protection against corrosion and provide an attractive metallic finish. This plating system also provides superior transmission capacity and low RF resistivity. And because the two outer layers are quite thin, they do not interfere with the copper layer's conductivity.

The Black Kūlrod T™ Finish adds only one protective coating to the copper conducting layer. Being inert, it doesn't become part of the radiating element and thus allows very low RF resistivity and dielectric loss — ideal for critical 900-plus frequencies. Black Kūlrod T™ also



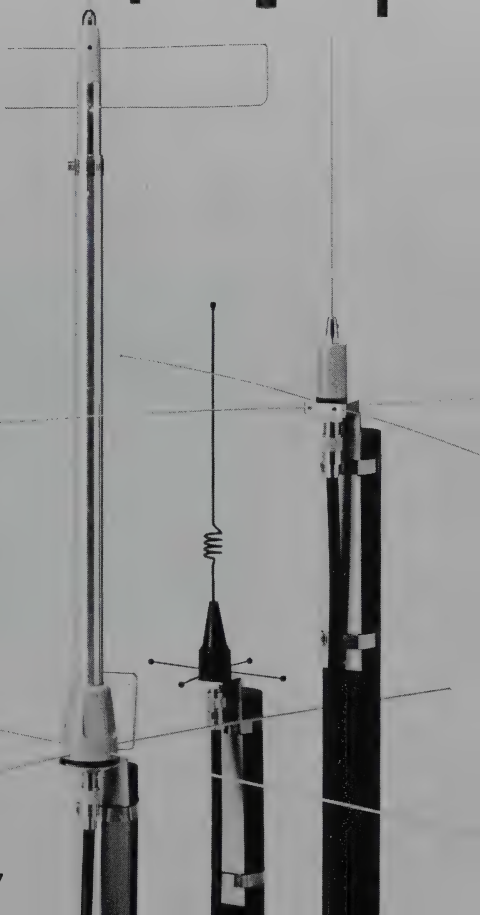
provides excellent protection against corrosion, such as sea salt, and is cosmetically appealing.

LARSEN YAGI DIRECTIONAL ANTENNAS

Larsen Yagi Antennas are light-weight, easy to install but of rugged construction to assure long life. The single or dual layer booms coupled with solid rod elements securely welded to the boom assure high performance and high permanence. Larsen Yagi Antennas are available in several gain configurations from 440–450 MHz and from 902–928 MHz.

Running cable and antenna installation is made easy with quality connectors and a wide selection of coax and hardline cable.

Remember, Larsen means big gains in base station antennas with consistent, reliable and trouble-free performance with every installation.

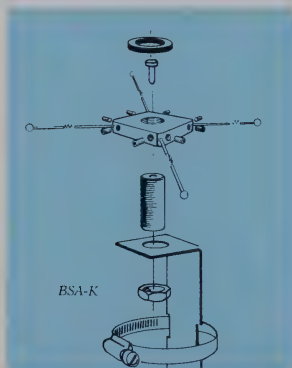


BSA SERIES

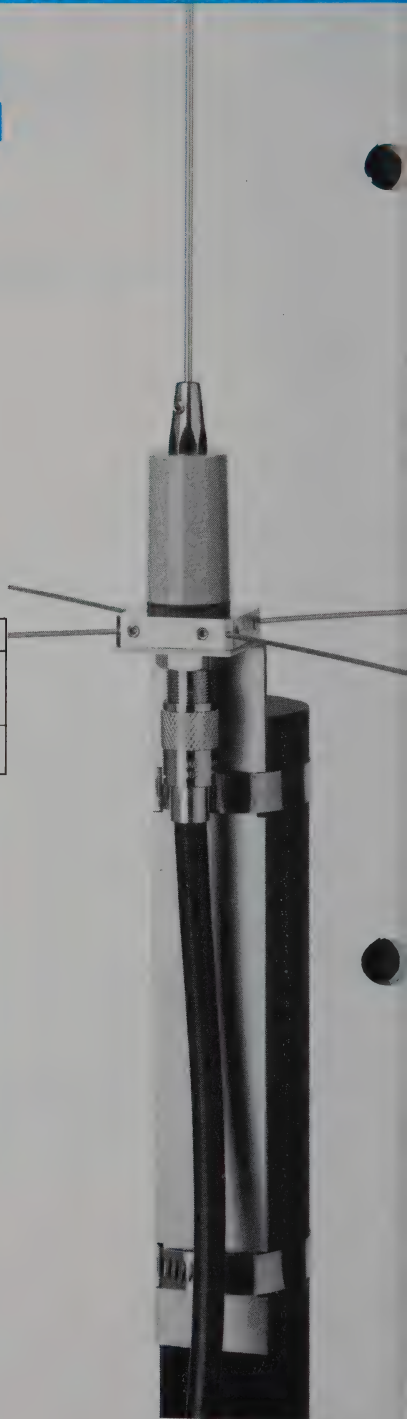
The BSA Series is available in a wide range of frequencies in VHF and UHF bands. They weigh a mere 1.5 lbs. and are easy to install on any 3/4" to 1-1/2" pole or pipe with stainless steel mounting clamps. A square nut radial collar is employed that strengthens each antenna and makes it easy to install and remove for extra portability and convenience. The square nut allows the removal of the radials without disassembling the whole antenna. Two set screws are used for each radial.

Larsen's exclusive Kūlrod® Plating makes the difference in their outstanding performance and gain characteristics under the most challenging conditions.

MODEL NUMBER	FREQUENCY RANGE (MHz)	GAIN	DESCRIPTION
BSA-150-K	144-148	2.5 dB	Includes antenna and all mounting hardware (no coax or connector).
BSA-220-K	200-225		
BSA-440-K	440-450	4.5 dB	
BSA-K	Base Mounting Kit Only. Includes all necessary hardware and is compatible with NMO, NLA or PO Series antennas. Antenna and coax not included.		



Square nut collar allows radials to be removed independently of coil for easy portability.



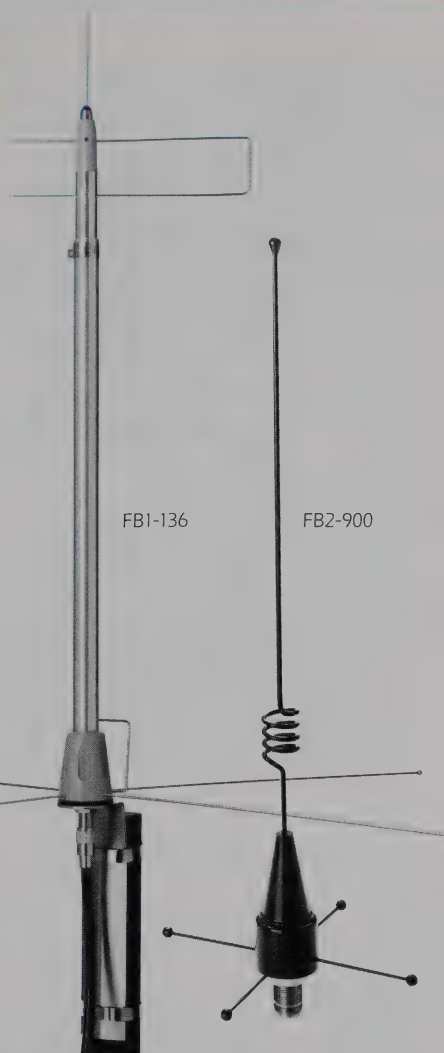
FB SERIES

FB1-136

The VHF FB1 model covers a wide 5 MHz bandwidth anywhere between 144 and 225 MHz which eliminates the need to stock two or three different models to cover the entire band. And with a 5/8 over 1/2 Wave collinear electrical configuration, it produces an exceptional 3.6 dB gain.

FB2-440 and FB2-900

The FB2 models cover UHF and 900 MHz frequency ranges and are designed for optimum performance. Its 5/8 over 1/4 Wave configuration offers a full 3.0 dB gain. These antennas are not only compact and easily transportable, but are also relatively inexpensive and extremely durable. The Black Kūrod T™ finish with standard open phasing coil design and stainless steel mounting bracket assures durability and high performance.



FB1-136

FB2-900

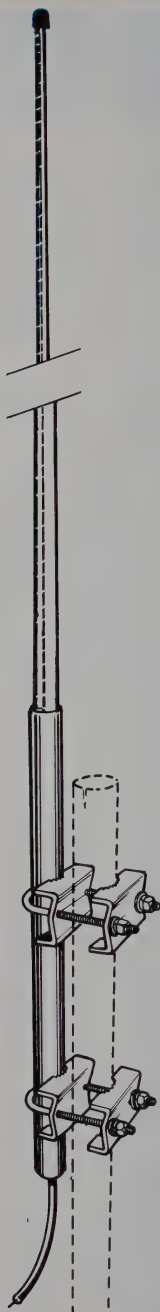
SPECIFICATIONS	FB1-136	FB2-440	FB2-900
Frequency Range	144-225 MHz	440-450 MHz	902-928 MHz
VSWR	Less than 1.5:1	Less than 1.5:1	Less than 2:1
Gain	3.6 dB compared to 1/4 Wave on a suitable ground plane.	3.0 dB compared to 1/4 Wave on a suitable ground plane.	3.0 dB compared to 1/4 Wave on a suitable ground plane.
Height	96"	30 1/4" approx.	14 1/4" approx.
Width	44"	15 1/8" approx.	15 1/8" approx.
Weight	2 1/2 lbs.	9 1/2 oz.	9 1/2 oz.
Mounting	Complete with all mounting hardware, radials and phasing rod. Bracket with hose clamps for attaching to 1 1/2" to 2 1/2" diameter poles.	Complete with all mounting hardware, radials and phasing rod. Bracket with hose clamps for attaching to 1 1/2" to 2 1/2" diameter poles.	Small stainless steel bracket for mast-top mounting and bracket with hose clamps for attaching to 1 1/2" to 2 1/2" diameter poles.
Interface	Antenna has UHF Female input, requiring UHF Male PL-259 connector (not included).	Antenna has N-Female input, requiring N-Male connector (not included).	Antenna has N-Female input, requiring N-Male connector (not included).

MODEL NUMBER	FREQUENCY RANGE (MHz)	GAIN	DESCRIPTION
FB1-136	144-225	3.6 dB	Fixed base antenna 5/8 Wave over 1/2 Wave collinear. Covers 94 MHz with one antenna. Complete with all mounting hardware, radials and phasing rod.
FB2-440	440-450	3.0 dB	Fixed base antenna 5/8 Wave over 1/4 Wave collinear. In black Kūrod T™ finish. Complete with all mounting hardware and radials. (No connector included.)
FB2-900	902-928		

FB3-1290 BASE OR REPEATER ANTENNA

The FB3-1290 antenna is a 16 element half-wave collinear design. It provides the best combination of gain and bandwidth in an omni-directional base antenna design. The brass and copper elements are securely connected and enclosed in a rugged fiberglass radome with anodized aluminum base. The two clamp sets provide for easy mounting to any vertical pole up to 2-1/8" in diameter.

SPECIFICATIONS	
Frequency Range	1215 to 1300 MHz at 1.5:1 VSWR
Gain	9 dBd
Type	16 element collinear
Input	N female (requires N male to interface) input connector inside mounting shaft for weather protection.
Length	68 Inches
Power Rating	50 Watts
Mounting	Clamps and U-bolts supplied to mount easily to vertical mast up to 2-1/8" in diameter.



YA SERIES



YA-1

440-450 MHz
8-ELEMENT
11 dBd GAIN

Where superior performance is required, this 8 element UHF Yagi Antenna is the only choice. It achieves a full 11 dBd gain. The solid rod elements are welded to a dual wall aluminum boom for maximum durability. Antennas are complete with heavy duty U-bolts and brackets to mount the antenna securely to any pole or pipe up to 1-5/8" O.D. The antenna is finished to assure highest performance under the most demanding conditions. (Yagi Stacking Kits for two or more Yagi Antennas are available on page 53.)



YA-2

440-450 MHz
5-ELEMENT
8.5 dBd GAIN

These rugged yet lightweight Yagi Antennas provide excellent performance due to Larsen's meticulous design and engineering. The solid rod elements are welded to the heavy duty aluminum boom for maximum durability. Its black finish allows exceptional weather resistance and durability. These Larsen 5 element Yagi Antennas will keep operating at peak performance for years. (Yagi Stacking Kits for two or more Yagi Antennas are available on page 53.)

YA1 SPECIFICATIONS

VSWR	Less than 1.5 to 1
Impedance	50 ohms
Forward Gain	11 dBd
Front to Back Ratio	23 dB
Maximum Power	300 watts
Feed Connection	N-Female or UHF Female (SO-239)
Lightning Protection	Direct Ground
Horizontal Beamwidth	42 degrees
Vertical Beamwidth	50 degrees
Elements	Solid aluminum rod coated with durable black finish.
Boom Material	Heavy duty aluminum coated with durable black finish 1/4" O.D. 53" long.
Mounting Hardware	Heavy duty U-bolts and brackets to accommodate up to 1 5/8" O.D. pipe.
Weight	2.4 lbs. max. at lowest frequency.

MODEL NUMBER	FREQUENCY RANGE (MHz)	GAIN	ANTENNA TERMINATES IN:
YA1-440-PL	440-450	11 dBd	SO-239
YA1-440-N	440-450		N-Female

YA2 SPECIFICATIONS

VSWR	Less than 1.5 to 1
Impedance	50 ohms
Forward Gain	8.5 dBd
Front to Back Ratio	20 dB
Maximum Power	300 watts
Feed Connection	N-Female or UHF Female (SO-239)
Lightning Protection	Direct Ground
Horizontal Beamwidth	44 degrees
Vertical Beamwidth	53 degrees
Elements	Solid aluminum rod coated with durable black finish.
Boom Material	Heavy duty aluminum coated with durable black finish 3/4" O.D. 33" long.
Mounting Hardware	Heavy duty U-bolts and brackets to accommodate up to 1 1/4" O.D. pipe.
Weight	1.2 lbs. max. at lowest frequency.

MODEL NUMBER	FREQUENCY RANGE (MHz)	GAIN	ANTENNA TERMINATES IN:
YA2-440-PL	440-450	8.5 dBd	SO-239
YA2-440-N	440-450		N-Female

YA5**902-928 MHz****6 ELEMENT****10 dBd GAIN**

YA5-900

YA6**902-928 MHz****3 ELEMENT****6 dBd GAIN**

YA6-900

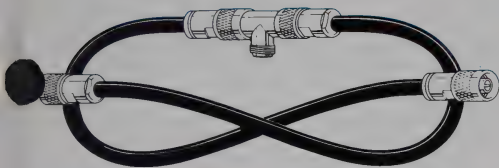
The Larsen YA5 and YA6 antennas are available for the 902-928 MHz band with choices of 6 elements and 3 element versions for greater gain.

The three antennas feature rugged all weather construction, including coax termination inside the Yagi Antenna, away from the wind and rain, plus a black weather resistant coating. High strength

aluminum alloys and welding construction assure long life. Other features include user interface via N-male connections to the N-female cable mounted connector supplied with the antenna.

The mounting hardware supplied will fit any pipe up to 1-5/8" in diameter. The mounting area on the antenna boom has also been reinforced for durability.

SPECIFICATIONS	YA5-900	YA6-900
Frequency Range (MHz)	902-928	902-928
Gain in dBd	10	6
Number of Elements	6	3
Horizontal Beamwidth	45 degrees	50 degrees
Vertical Beamwidth	55 degrees	60 degrees
Maximum Power	300 watts	300 watts
Mounting Hardware	Heavy duty U bolts and brackets.	
Finish	Black polyurethane over alodined aluminum.	
Interface	Via attached flexible coax terminated in N-female connector.	



STACKING KITS

The stacking kits below can be used with the appropriate Larsen Yagi Antennas to combine 2, 4, 8, 16, etc., Yagis. One stacking kit will join two Yagi Antennas, three will join 4, seven will join 8, etc.

MODEL NO.	DESCRIPTION
STACKKIT-PL	For use with two or more YA1 or YA2 type Yagis with UHF connector output.
STACKKIT-N	For use with two or more YA1 or YA2 type Yagis with N type connector output.
STACKKIT-900	For use with two or more YA5 or YA6 type Yagis with N type connector output.

QUARTER-WAVE SHORTING DEVICE

Protects base stations and other electronic equipment from lightning and at the same time is totally transparent at its design frequency. Available with either "N" or "UHF" connectors. At one end of the device a "T" adapter interfaces the QSD to the existing 50 ohm transmission line while the other end has been fitted with a heavy brass threaded ferrule for connection to the grounding system. They are available for applications up to and including 1.3 GHz. If you have questions about how to incorporate this device into your system or just how it works in general, contact Larsen's engineering department or your Larsen sales representative.



MODEL NO.	DESCRIPTION
QSD-UHF	Quarter-wave Shorting Device with UHF Connector
QSD-N	Quarter-wave Shorting Device with N Connector

ACCESSORIES/COAX CABLE AND CONNECTORS






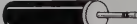
Larsen offers a variety of coax cable to serve mobile and base station needs from 28–1300 MHz. Each type is the best of its kind for its intended application—from servicing low band frequencies under normal conditions to critical low-loss UHF operation under extremes in weather, harsh use, etc.

In addition to bulk lengths, four different coax cable options are available with Larsen mounting kits.

COAX COMPARISONS

MODEL NO.	COAX TYPE	LENGTHS AVAILABLE	MOST FREQ. APPLIC.	LOW-LOSS PROP. ERTIES	DURABILITY	FLEXIBILITY	OUT-SIDE DIAM.	RELATIVE COST	RF LOSS PER 100' OF COAX CABLE (IN dB)		
									150 MHz	450 MHz	825 MHz
CX-100	RG-58 A/U	100' Roll	27-512 MHz	Good	Good	Very Good	.195"	Low	6.8	12.9	18.3
CX-1000		1,000' Roll									
8240-100	RG-58 /U	100' Roll	27-512 MHz	Very Good	Good	Good	.195"	Low-Med.	5.2	9.5	15.2
8240-1000		1,000' Roll									
LL-100	AA-3096	100' Roll	800 MHz or higher	Best	Good	Good	.242"	Medium	3.8	7.2	11.0
LL-1000		1,000' Roll									
DS-100	Dual Shield	100' Roll	800 MHz or higher	Excellent	Good	Excellent	.195"	Medium	5.3	9.0	12.6
DS-1000		1,000' Roll									
RG-213	RG-213 Outdoor	Per foot, cut to Specification	27-900 MHz	Excellent	Excellent	Poor	.405"	Medium	2.7	5.0	7.6
9914	9914 Dual Shield	Per foot, cut to Specification	27-900 MHz	Excellent	Excellent	Poor	.405"	Medium	2.0	4.0	5.44

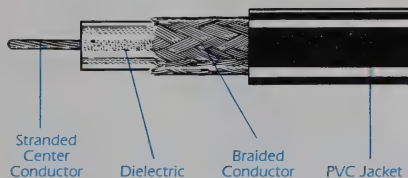
COAX CONNECTORS

MODEL NUMBER	FITS COAX	MALE/FEMALE	CRIMP/SOLDER	CONNECTOR TYPE (ALL SHOWN AS SOLDER-TYPE, EXCEPT MPL)	
BNC	RG-58	M	Solder		BNC Male
BNC-CRIMP	RG-58	M	Crimp		
BNC-LL	AA-3096	M	Solder		PL-259 Type UHF Male
PL-259	RG-58	M	Solder		
PL-259-LL	AA-3096	M	Solder		
PL-259-8	RG-213	M	Solder		
58FCP	RG-58	M	*		TNC Male
PL-259T	RG-58	M	Solder		
TNC	RG-58	M	Solder		
TNC-LL	AA-3096	M	Solder		
TNC-LL-CRIMP	AA-3096	M	Crimp		N Male
TNC-CRIMP	RG-58	M	Crimp		
N	RG-58	M	Solder		
N-CRIMP	RG-58	M	Crimp		
N-LL	AA-3096	M	Solder		Miniature UHF Male
N-LL-CRIMP	AA-3096	M	Crimp		
MPL	RG-58	M	Crimp		Mini Phone Plug
MP	RG-58	M	Solder		

* Special Snap-Lock design.

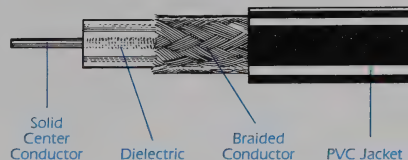
RG-58 A/U COAX

This type serves well as a high quality, low cost coax for most applications below 512 MHz. Typical loss figures (per 100' of cable) are 6.8 dB at 150 MHz and 12.9 dB at 450 MHz. Due to its relatively high loss at UHF frequencies (18.3 dB per 100' at 825 MHz), it is not usually recommended for use above 512 MHz. The stranded center conductor offers very good flexibility and long life under most conditions.



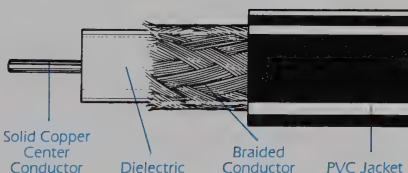
RG-58/U COAX

This is the lowest cost cable for applications above 512 MHz — with a loss at 825 MHz of 15.2 dB per 100'. Its greater performance over RG-58 A/U type is due to the use of a solid center conductor rather than the braided kind. This cable is standard for CM mounting kits and can be special ordered for other series.



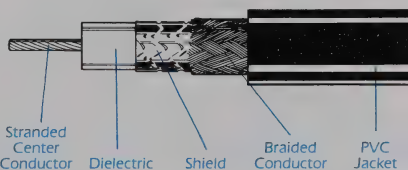
AA-3096 COAX

When the very highest performance is required for mobile applications, this type permits a loss of only 11.0 dB per 100' at 825 MHz. This coax, however, is slightly larger in diameter and somewhat stiffer than the RG-58 cables. Larsen mounting kits available with this cable are identified by having "LL" in the model number.



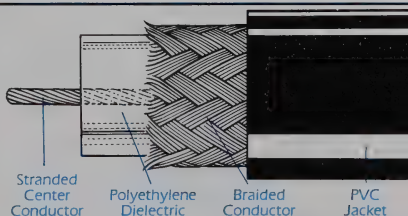
DS COAX

This RG-58 A/U coax employs two shields, a full aluminum/mylar wrap covered by a braid. The combination of shields, plus low-loss dielectric material and stranded center conductor make an excellent choice for mobile applications. It has the right combination of low-loss (12.6 dB per 100' at 825 MHz), excellent flexibility and uses standard sized connectors. Larsen Products that use this coax are all models with "DS" in model number and the KG-Series.



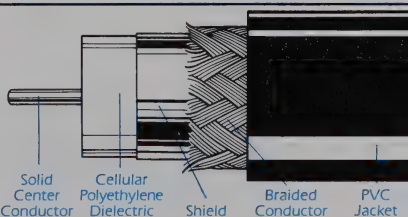
RG-213 COAX

This RG-8 sized coax uses stranded center conductor, polyethylene dielectric and non-contaminating black PVC jacket that makes it ideal for outdoor applications where it will be exposed to ultraviolet light. Loss per hundred feet ranges from 2.7 dB at 15 MHz to 8 dB at 900 MHz.



9914 COAX

This RG-8 size coax employs cellular polyethylene dielectric, solid center conductor and dual shielding to achieve excellent loss figures. Loss per hundred feet range from 2.0 dB at 150 MHz to 5.7 dB at 900 MHz.

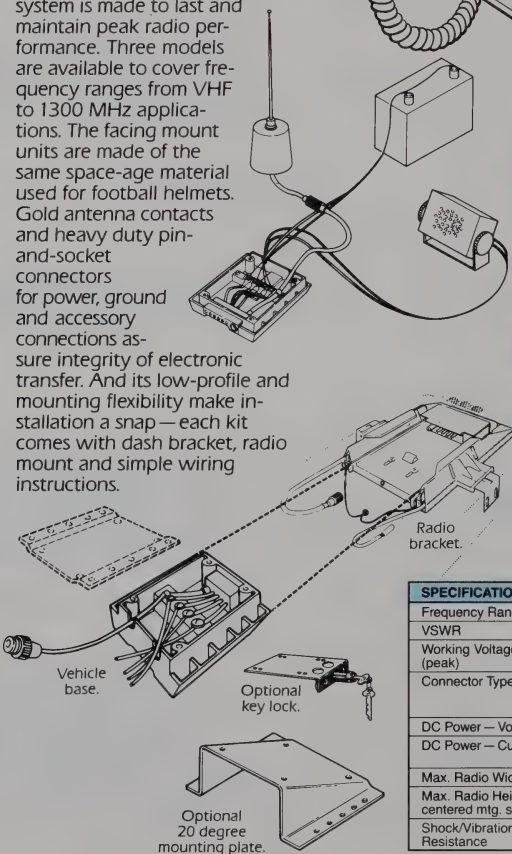
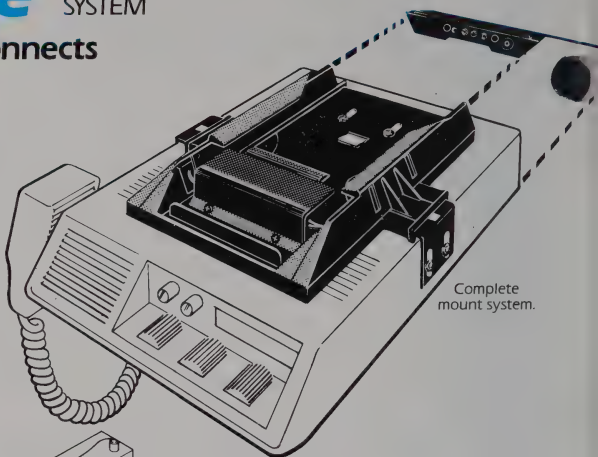


SuperSlide™ RADIO MOUNT SYSTEM

Installs quickly... disconnects in one second!

SuperSlide™ Mount helps put a stop to vandalism and theft the quick and easy way. Once installed (it's quick and simple!), it slides in and out — instantly — for easy relocation away from vehicle, in trunk or under seat. Also, it's the easiest way to use the same radio in other vehicles and cut down-time by plugging in a replacement when one radio needs servicing.

This rugged mounting system is made to last and maintain peak radio performance. Three models are available to cover frequency ranges from VHF to 1300 MHz applications. The facing mount units are made of the same space-age material used for football helmets. Gold antenna contacts and heavy duty pin-and-socket connectors for power, ground and accessory connections assure integrity of electronic transfer. And its low-profile and mounting flexibility make installation a snap — each kit comes with dash bracket, radio mount and simple wiring instructions.



MODEL	DESCRIPTION
'100' Series for Frequencies to 512 MHz	
SS-100	Complete mount kit with radio bracket and vehicle base. Black.
SS-101	Vehicle base only. Black.
SS-103	Radio bracket only. Black.
'500' Series for Frequencies to 900 MHz	
SS-500	Complete mount kit with radio bracket and vehicle base. Black.
SS-501	Vehicle base only. Black.
SS-503	Radio bracket only. Black.
'800' Series for Bands up to 1300 MHz	
SS-800	Complete mount kit with radio bracket and vehicle base. Black.
SS-801	Vehicle base only. Black.
SS-803	Radio bracket only. Black.
ACCESSORIES	
SS-102	Accessory contact kit. Includes two pins and sockets with wiring to increase number of unshielded contacts from four to six.
SS-105	Key lock kit. An extra security option when radio remains in vehicle.
SS-106	Angled mounting plate. Provides 20° radio mount angle by replacing flat plate furnished with vehicle base.

SPECIFICATIONS	SS-100	SS-500	SS-800
Frequency Range	DC to 512 MHz	DC to 900 MHz	DC to 1300 MHz
VSWR	1.1 to 1 or better	1.2 to 1 or better	1.1 to 1 or better
Working Voltage (peak)	500 Volts	500 Volts	500 Volts
Connector Type	UHF (PL-259)	Male: Teflon® PL-259 Female: Type N	Type N
DC Power — Voltage	12-24 VDC	12-24 VDC	12-24 VDC
DC Power — Current	10A Continuous 12A Maximum	20A Continuous 24A Maximum	20A Continuous 24A Maximum
Max. Radio Width	8 3/4"	8 3/4"	8 3/4"
Max. Radio Height (with centered mtg. screws)	3 1/8"	3 1/8"	3 1/8"
Shock/Vibration Resistance	Exceeds EIA Standards	Exceeds EIA Standards	Exceeds EIA Standards

CLAMMASTER™

Clamshell Mount for control heads, radios and other devices.

One quality engineered mount lets you install the majority of cellular phones quickly, easily and inexpensively.

Strong 18 gauge steel mounting plate holds telephone heads secure and accepts both NEC and AMPS configurations. Plus, the ClamMaster™ Mount lets you disconnect the mount halves by simply loosening two thumb screws. Separate the halves for easier installation. Once installed, the halves separate just as easily to remove the phone for servicing or security storage. The thumb screws also let you adjust the ClamMaster™ Mount a full 90 degrees to the optimum angle. Just tighten by hand to lock securely in the desired position — no tools are necessary.

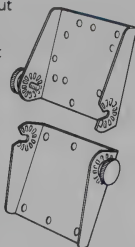
Strong 18 gauge steel.

Ratchet-grip design locks in desired angle without stripping, even under the toughest conditions.

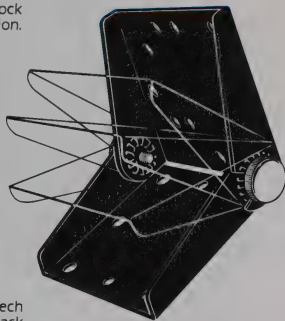
Accepts both NEC and AMPS mounting configurations.

Detachable halves allow for easy installation and removal of phone for security, storage or servicing.

Thumb screws require no tools to adjust or lock into position.



High-tech matte black finish complements any make and model phone.



MODEL NO.	DESCRIPTION
CM-100	ClamMaster™ cellular control mount hardware set.

STACKMASTER™

Multiple unit mobile radio mount system.

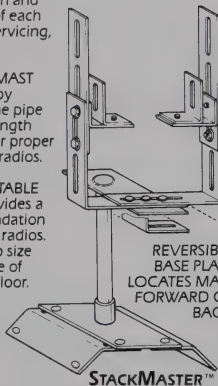
The best answer for above-the-seat mounting of up to five mobile radios and related equipment. The StackMaster™ Mount is fully adjustable in all directions to place equipment in the safest, most convenient location. Any radio unit can be removed or adjusted without disturbing the rest and its complete flexibility allows acceptance of all styles of mount brackets. Combined with its high-tech black matte finish and low cost, it's the best choice available for any multiple radio setup.

TILTABLE MOUNTING BRACKETS.

INDEPENDENT MOUNTING allows easier installation and removal of each unit for servicing, etc.

ADJUST MAST HEIGHT by cutting the pipe mast to length desired for proper height of radios.

LARGE, STABLE BASE provides a solid foundation for heavy radios. Adjusts to size and shape of hump or floor.



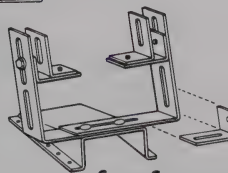
STACKMASTER™

ADJUSTABLE EXTENSIONS Extensions to uprights can be set to provide the exact space needed for equipment.

PIVOTING ARM with two locking pivots.

Width between uprights adjusts to widest units, to minimize space required.

REVERSIBLE BASE PLATE LOCATES MAST FORWARD OR BACK.



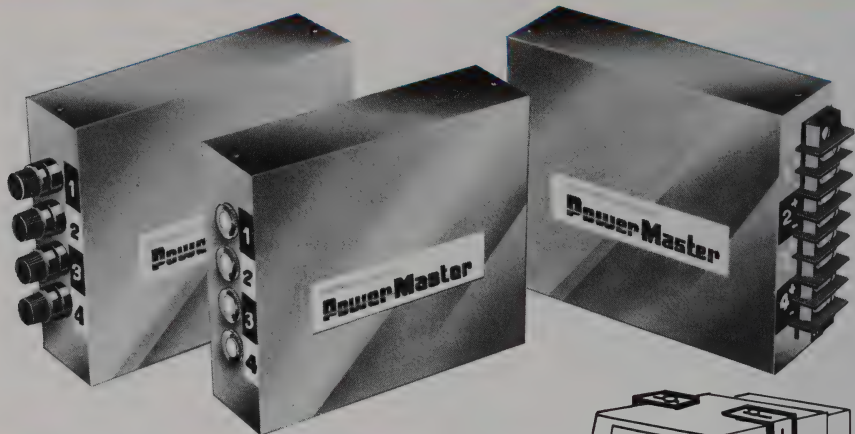
SHORTSTACK™

SHORTSTACK™

Below-the-dash multiple mount system.

This abbreviated version of the StackMaster™ Mount holds two or three mobile radio units. It fits below the dash in most cars and its base plate provides a convenient fixed angle for comfortable operation. Most of the same flexibility features are also incorporated to make a very expensive, stylish and compact mounting system.

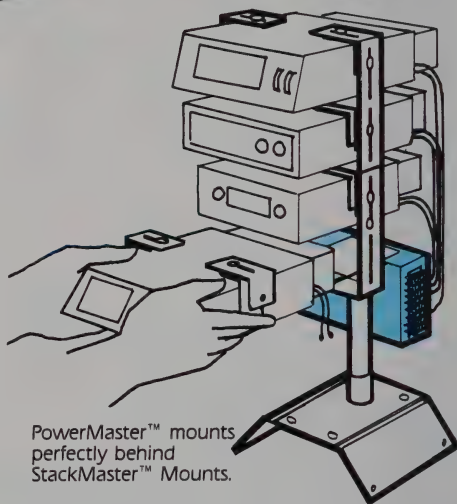
MODEL NO.	DESCRIPTION
SM-202	2-Unit StackMaster™ Mount, matte black.
SM-204	4-Unit StackMaster™ Mount, matte black.
SM-212	2-Unit Short Stack™ Mount, matte black.



PowerMaster™ 4-OUTLET POWER DISTRIBUTORS

PowerMaster™ lets you distribute power from a 40 amp battery line to a full complement of mobile electronic devices — radio, scanner, siren/light bar control, mobile data terminal, etc. This distributor feeds four separate units, each with its own fuse or circuit breaker of up to twenty amps.

- Fuses or breakers face the driver's footwell for easy access and connection points face the passenger's footwell for quick disconnect for servicing or removing individual units.
- PowerMaster™ mounts behind the StackMaster™ mast for custom fit and very easy access.
- Fuses and breakers can be customer sized for each piece of equipment. Special ratings can be specified by special request.



PowerMaster™ mounts perfectly behind StackMaster™ Mounts.

MODEL NO.	DESCRIPTION
PM-300B	PowerMaster™ 4-Outlet (Breakered)
PM-300F	PowerMaster™ 4-Outlet (Fused)

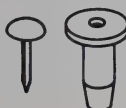
SPECIFICATIONS	PM-300B (Breakered)	PM-300F (Fused)
Input Capacity	12-16VDC/40 Amps	12-16 VDC/40 Amps
No. of Output Circuits	4	4
Output Capacity Per Circuit	12-16 VDC/20 Amps	12-16 VDC/20 Amps
Circuit Protection	Circuit Breakers	3AG Fuses
Protectors normally supplied	10 Amps*	10 Amps*
Dimensions in inches (millimeters)	5 × 6 × 1-5/8 (127 × 152 × 41)	5 × 6 × 1-5/8 (127 × 152 × 41)

*(Other Ratings Available)



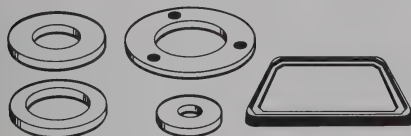
ANTENNA CONES

MODEL NO.	DESCRIPTION
Q-Cone-.073	Cone with .073" blind hole used on Q antennas. Chrome.
Q-Cone-.073B	Same as above in black.
Q-Cone-.100	Cone with .100" blind hole used on UHF or VHF gain and Q-52 and Q-88 antennas. Chrome.
Q-Cone-.100B	Same as above in black.
Q-Cone-.125	Cone with .125" blind hole used on 800 MHz closed coil and all WBQ antennas. Chrome.
Q-Cone-.125B	Cone with .125" blind hole used on CMQ-825B antenna. Black.



CONTACT REPLACEMENT KIT

MODEL NO.	DESCRIPTION
CRK	Contact replacement kit for NLA mounts.



GASKETS

MODEL NO.	DESCRIPTION
RG-JM-MNT	Rubber gasket for JM mounting hardware, 3 per pkg.
RG-LA-MNT	Rubber gasket for LA mounting hardware, 3 per pkg.
RG-LM-MNT	Rubber gasket for LM mounting hardware, 3 per pkg.
RG-NLA-MNT.	Rubber gasket for NLA mounting hardware, 3 per pkg.
RG-NMO-ANT	Rubber gasket internal to NMO coils, 3 per pkg.
RG-OM-ANT	Rubber gasket for OM series coils, 3 per pkg.
RG-SBK-MNT	Rubber gasket for SBK Mounts, 3 per pkg.
RG-TLM-MNT	Rubber gasket for trunk lid mount, one per pkg.



Kilduckie® ANTENNA CAPS

MODEL NO.	DESCRIPTION
Cap 1	Replacement caps for all KD1 through KD10 Larsen Kilduckie® helical portable antennas. 25 per pkg. (specify color).
Cap 2	Replacement caps for all Larsen 1/4 wave and HQ Kilduckie® portable antennas. 25 per pkg.
Cap 3	Replacement cap for all ST type Kilduckie® antennas. 25 per pkg.



O-RINGS

MODEL NO.	DESCRIPTION
O-LM-MNT	O-Ring for LM mounting hardware. 3 per pkg.
O-NMO-MNT	O-Ring for NMO mounting hardware. 3 per pkg.
O-NMO-ANT	O-Ring for NMO coils and bases. 3 per pkg.
O-PO-MNT	O-Ring for PO mounting hardware. 3 per pkg.



ROD TIPS

MODEL NO.	DESCRIPTION
Ball-1	Rod tip for W-490, W-540 and Q-52 antennas. Tear drop shaped, chrome. 10 per pkg.
Ball-1-B	Same as above in black plastic.
Ball-2	Rod tip for Q, NMOQ and NLAQ antennas. Round shaped, chrome. 10 per pkg.
Ball-2-B	Same as above in black plastic.
Ball-3	Rod tip for UHF gain antennas. Round shaped, chrome. 10 per pkg.
Ball-3-B	Same as above in black plastic.



SET SCREWS

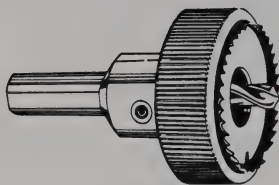
MODEL NO.	DESCRIPTION
#8-32	Allen head set screws used on all coils. Bag of 25.
#10-32	Allen head set screws used on TLM models. Bag of 25.
#6-32	Allen head set screws used on NMOQ-SPEC. Bag of 25.



ANTENNA HOLE DRILL

Makes a clean round 3/8" hole in vehicle as opposed to a star-shaped hole made with ordinary twist drills. Fits on 1/4" or larger electrical drills and limits the hole drilling depth to 3/8" so it won't damage the headliner.

MODEL NO.	DESCRIPTION
HD-2	Antenna Hole Drill.



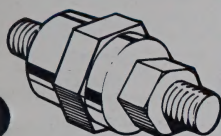
ANTENNA HOLE SAW

Designed specifically for installing permanent mount mobile antennas. Makes a 3/4" hole and limits hole depth to 1/8". Fits 3/8" or larger electric drills. Includes two blades.

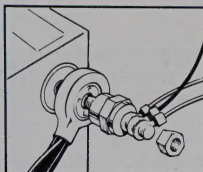
REPLACEMENT BLADES

Set of two replacement blades for HS-1.

MODEL NO.	DESCRIPTION
HS-1	Antenna Hole Saw.
HS-Blades	Two blades per pack.



BATTERY BOLT



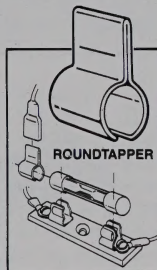
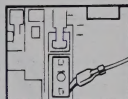
BATTERY BOLT

Replaces side mount battery bolts with a longer terminal for additional power connections with $\frac{3}{8}$ " ring leads. All brass unit comes complete with crimp terminal and nut.

MODEL NO.	DESCRIPTION
BATT BOLT	Battery bolt with terminal.



FUSETAPPER



ROUNDTAPPER

FUSE CONNECTORS

Fusetapper Kits. Make it easy to add a circuit to the new flat automotive fuseblocks. The connector taps into either leg of the blade fuse to provide another circuit from either the hot or cold side of the fuse. Available in sets of 25 taps and matching crimp lugs designed for popular sized wire.

MODEL NO.	DESCRIPTION
FUSTPR RD	25 sets of taps and crimp lugs for 18-22 gauge wires.
FUSTPR BL	Same as above for 14-16 gauge wire.
FUSTPR YL	Same as above for 10-12 gauge wire.

Roundtapper Kits. Allow extra circuits for auto fuse blocks that use round glass fuses. Gives a strong mechanical connection that is protected from accidental shorting. Available in sets of 25 taps and matching crimp lugs designed for popular sized wire.

MODEL NO.	DESCRIPTION
ROUNDTPR RD	25 sets of taps and crimp lugs for 18-22 gauge wire.
ROUNDTPR BL	Same as above for 14-16 gauge wire.
ROUNDTPR YL	Same as above for 10-12 gauge wire.



Grommets



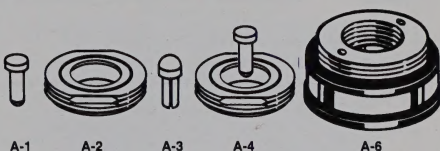
HP-34



HP-38

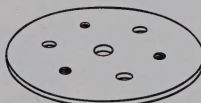
GROMMETS AND HOLE PLUGS

MODEL NO.	DESCRIPTION
Grommets	Plastic grommet that locks securely into a $\frac{3}{4}$ " hole and grips the coax to hold it in the center. Pkg. of 100.
HP-38	Plastic hole plug for $\frac{3}{8}$ " holes when antenna is removed but not replaced. 6 per pkg.
HP-34	Plastic hole plug for $\frac{3}{4}$ " hole when antenna is removed but not replaced. 5 per pkg.



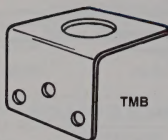
INTER ANTENNA ADAPTERS

MODEL NO.	DESCRIPTION
A-1	Converts SO-239 connection such as BA-K, BSA-K for use with NLA series antennas.
A-2	Converts BSA-K antenna mount for use with NMO antennas. Coupled with A-1 adapter would convert other SO-239 type connections for use with NMO series antennas.
A-3	Converts A/S K-49 or K-57 mounts to accept Larsen NLA series antennas.
A-4	Includes A-1 and A-2 adapters.
A-6	Converts NLA series mounts to accept NMO series antennas.



OM MOUNTING PLATE

MODEL NO.	DESCRIPTION
OM-PLATE	Mounting plate designed to stiffen the area around the mounting of an OM series antenna. This stiffening also includes built-in 10-32 threads on the plate in the proper pattern for the OM antenna. The plate is most useful in fiberglass installations where the fiberglass might be deteriorated by the flexing of the surface under the antenna.



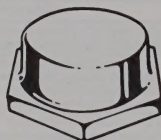
TMB



TLM

MOUNT BRACKETS

MODEL NO.	DESCRIPTION
TMB-34	Stainless steel trunk gutter mounting bracket for 3/4" hole. (Includes screws.)
TMB-38	Stainless steel trunk gutter mounting bracket for 3/8" hole. (Includes screws.)
TMB-58	Stainless steel trunk gutter mounting bracket for 5/8" hole. (Includes screws.)
TMB-OM	Stainless steel trunk gutter mounting bracket for OM series antenna. (Includes screws.)
TLM-34	Trunk lid mount only. No mounting hardware or coax. Compatible with all Larsen mounts requiring a 3/4" hole.
TLM-38	Same as above for a 3/8" hole.
TLM-58	Same as above for a 5/8" hole.



RAIN CAP

RAIN CAPS

MODEL NO.	DESCRIPTION
LM-CAP	Protective cover used on LM mounts when antenna is not installed.
NLA-CAP	Protective cover used on NLA mounts when antenna is not installed.
NMO-CAP	Protective cover used on NMO mounts when antenna is not installed.



SPRING

SPRING

MODEL NO.	DESCRIPTION
SPRING	Narrow diameter shock spring which interfaces with Larsen VHF, UHF and 800 MHz antennas.



NLA TEST-1



NMO TEST-1

TEST MOUNT ADAPTERS

MODEL NO.	DESCRIPTION
NLA Test-1	Test adapter for NLA mounts allows checking of coax feedline by allowing dummy load to replace the antenna. Also used to extend coax line to temporarily remote an antenna.
NMO Test-1	Same as above for NMO mount with additional features of floating contact design, good SWR match into 800 MHz range and nickel-plated brass construction.

VHF/UHF DUAL BAND COUPLER

The AD-2/70 bi-directional passive coupler is required for use with Larsen Dual Band Antennas where one or both bands will be used for transmitting. This device splits the spectrum, delivering VHF energy to the VHF radio, UHF to the UHF radio, and combining RF energy coming from the VHF and UHF radios to the antenna. Isolation between VHF and UHF ports on the AD-2/70 is more than 50 dB. Insertion loss is a low 0.3 dB through either port. Some dual band radios have a coupler built in.

SPECIFICATIONS:

Usable Bandwidth VHF: 120–230 MHz
 UHF: 320–500 MHz at 1.5:1
 or better SWR

Crossover Frequency 283 MHz

Suppression VHF at 450 MHz: – 50 dB

UHF at 150 MHz: – 60 dB

Impedance 50 Ohm nominal at all ports

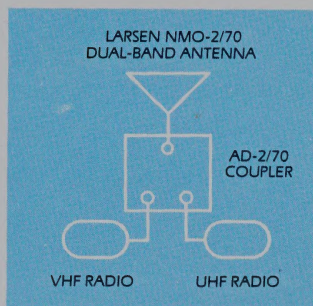
Maximum Power . . . 200 watts P.E.P. composite

Insertion Loss 0.3 dB VHF or UHF
 through proper port

Connectors SO-239 at all ports

Size 1-3/4" by 2-5/8" by 3"

MODEL NO.	DESCRIPTION
AD-2/70	Dual Band Coupler



BNC-TO-BNC MAGNETIC MOUNT

Larsen's magnetic mount unit, with BNC connectors at both ends, allows the portable radio operator to remote the portable's antenna outside the vehicle for mobile operation.

IT'S QUICK and SIMPLE TO USE.

Remove the BNC male antenna and attach it to the BNC female on the magnetic mount.

Place magnetic unit on the vehicle and connect BNC male end to the radio. Takes only

seconds to set up — without an extra antenna! And it stores compactly for use at any time.

Plenty of cable — 12 feet — allows for use on just about any vehicle. The magnetic mount employs heavy magnets and has a Teflon® covered base to protect vehicle's paint. Mag mount measures 3-1/2" × 3" × 1" and total unit weighs just 14 ounces.



MODEL NO.	DESCRIPTION
BNC-MM-BNC	Magnetic mount with BNC connectors.

AMATEUR RADIO ANTENNAS

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